The price of single copies of THE FORUM is now 35 cents.
The subscription price—$3.00 per year—remains unchanged.

The Forum

EDITED BY J. M. RICE

NOVEMBER, 1897

Dangerous Defects of Our Electoral System.—I.
Hon. J. G. CARLISLE 257
Ex-Secretary of the Treasury

Notable Letters from my Political Friends.—II.
Senator JUSTIN S. MORRILL 267

Some Lessons of the Yellow Fever Epidemic,
Dr. WALTER WYMAN 282
Supervising Surgeon-General Marine Hospital Service

The Relation of Production to Productive Capacity,
Hon. CARROLL D. WRIGHT 290
United States Commissioner of Labor

The Monetary Commission . Prof. J. LAURENCE LAUGHLIN 303
Member of the Monetary Commission

Our Proposed New Sugar Industry . . . EDWIN F. ATKINS 313

The Disuse of Laughter . . . . . Sir LEWIS MORRIS 319

THE MISSISSIPPI RIVER PROBLEM:
Success of the Levee System, Hon. ROBT. STEWART TAYLOR 325
Member of the Mississippi River Commission

Dredging *versus* Levees . . . . . GUSTAVE DYES 334

England and the Famine in India,
Prof. E. WASHBURN HOPKINS 342

How the Greeks were Defeated . . . FREDERICK PALMER 350

Letters to a Living Author . . . . . "ARTHUR PENN" 366

American Archæologists in Greece . . . . . J. GENNADIUS 372

NEW YORK
THE FORUM PUBLISHING COMPANY, 111 Fifth Avenue

AGENTS: { LONDON: G. P. Putnam's Sons, 24 Bedford St., Strand } 1s. 6d. a Copy
{ PARIS: Librairie Galignani, 224 Rue de Rivoli } 18s. a Year

35 Cts. a Copy [Vol. XXIV. No. 3] $3.00 a Year

The Crowning Triumph

of a long and successful career—

THE NEW MODELS

of the

Remington

Standard Typewriter.

The Always-Best Typewriter made better yet.

WYCKOFF, SEAMANS & BENEDICT

327 Broadway, New York

MENNEN'S

BORATED TALCUM

TOILET POWDER

AFTER SHAVING

Delightful After Shaving

A Positive Relief for Prickly Heat and All Affections of the Skin.

Get MENNEN'S (the only genuine.)

Refuse All Other Powders, which are Liable to do Harm.

Approved by the **Medical Profession** and **Trained Nurses**, for the use of Infants and Adults.

Sold everywhere, or mailed for 25 cents. (Sample free.)

Gerhard Mennen Co., Newark, N. J.

"THE CRITERION"

Pronounced by Musical and Mechanical Experts

"THE WORLD'S BEST MUSIC BOX,"

with an Unlimited Supply of Music at Trifling Cost.

Combines all the desirable improvements of instruments of this kind, and besides, possesses many original and valuable features. Suits the solemnity of the hour of prayer and the mirth of the ballroom.

Mechanically, it is faultless.
Musically, the highest achievement of its kind.
In appearance, an ornament anywhere.

An unselfish companion that caters to your every mood untiringly. It is never out of tune, and being simple and strong in construction, is not apt to be troublesome. The music is obtained from highly tempered steel combs, and each melody is stamped on metal tune disks, which are practically indestructible. Our arrangements of music are as near perfection as the greatest skill and unlimited experience in mechanical instruments can make them.

M. J. PAILLARD & CO., - - - 680 Broadway, New York.

The Knickerbocker Press, New Rochelle, N. Y.

Entered at the Post-Office at New York, N. Y., as second-class mail matter.

The Forum

NOVEMBER, 1897.

DANGEROUS DEFECTS OF OUR ELECTORAL SYSTEM.—I.

THE Twelfth Amendment to the Constitution, prescribing the mode of electing the President and Vice-President, was adopted September 25, 1803, and has, therefore, been in force a little more than ninety-four years. This amendment, which was designed only for the purpose of avoiding the difficulties and dangers disclosed in the contest between Mr. Jefferson and Mr. Burr, in 1801, has never been regarded by our leading statesmen as an entirely satisfactory adjustment of the whole subject; and agitation for a change, which began in many of the State legislatures and in Congress within a few years after its adoption, has been renewed at intervals during the whole period of its existence.

During the years immediately preceding the election of 1824, a majority of the States, through their legislatures, declared in favor of a different method, and a great many proposed amendments were offered in the Senate and House of Representatives. Some of these passed the latter body by the requisite constitutional vote: others received very nearly the necessary majority in the Senate. During the period mentioned, proposed amendments were submitted in Congress by many gentlemen of national reputation in both Houses, representing different parts of the country; but, notwithstanding the fact that the necessity for a simpler and more direct method of choosing the Chief Executive has been very generally conceded in all the debates upon the subject, it has not been possible, so far, to secure in both Houses, the majority required for the submission of any plan suggested. In fact, for many years, no plan has been fully considered or voted on in either branch of Congress.

Copyright, 1896, by The Forum Publishing Company.
Permission to republish articles is reserved.

By the original constitutional provision, the electors were to be appointed—as they still are—by each State in such manner as its legislature might direct; and they were required, when assembled, to vote for two persons, without designating which one was preferred for President or for Vice-President. When the certificates were opened and the votes counted, the person found to have received the greatest number of votes was to be President, if such number should be a majority of the whole number of electors appointed; and, after the President had been chosen, the person having the greatest number of votes of the electors was to be Vice-President. In case no one had received a majority of the whole number of electors appointed, or, in case there should be more than one having such majority, and having an equal number of votes, the President was to be chosen by the House of Representatives, voting by States. After the choice of the President, and if there remained two or more persons who had received an equal number of votes, the Vice-President was to be chosen by the Senate.

At the election in 1800, Mr. Jefferson and Mr. Burr each received seventy-three electoral votes; and the House of Representatives, after an angry contest, continued for seven days, during which thirty-six ballots were taken, elected Mr. Jefferson President, Mr. Burr becoming Vice-President, as provided by the Constitution. The country was so thoroughly excited and alarmed by this contest and the circumstances attending it, that, before the next Presidential election, an amendment was submitted by Congress to the several States, and was ratified by the requisite number, changing the method of voting in the electoral colleges so as to require each elector to name on one ballot the person voted for as President, and, on a distinct ballot, the person voted for as Vice-President. It provides, that the person having the greatest number of votes for President shall be the President, if such number be a majority of the whole number of electors appointed, and, if no person have such majority, then, from the persons, not exceeding three, having the highest numbers of votes on the list of those voted for as President, the House of Representatives shall immediately choose the President by ballot, the representation from each State having one vote. If the House shall fail to make a choice before the fourth day of March next following, the Vice-President shall act as President, as in the case of the death, resignation, or constitutional disability of the President. The person who shall receive the greatest number of votes for Vice-President, if such number be a majority of the whole number of electors appointed, shall be Vice-President; but, if no person have such a majority,

it is provided that the Senate shall choose that officer from the two persons on the list having the highest numbers of votes.

While it has been generally admitted that the existing provisions of the Constitution on this subject, although better, perhaps, than those contained in the original instrument, are not only cumbersome and inconsistent with the democratic spirit of our institutions, but so imperfect in their details and so uncertain in their practical operation as to constitute a menace to the peace of the country at each recurring Presidential election, yet the political and material interests involved in any attempt to change them are so large and various, that we may be compelled to go on, without a change, until some catastrophe shall occur, which will either precipitate hasty and inconsiderate action, or prevent any action, because it has become too late to accomplish anything.

Looking back over the numerous and serious differences that have arisen, and considering the inadequate means provided for their orderly and authoritative adjustment, it seems almost marvelous that we have been able for so long a period to secure a regular and peaceable succession of Presidents and Vice-Presidents. In no other country in the world would such a system have failed to produce civil dissensions of the most dangerous character; and we shall be fortunate indeed if, in view of the growing importance of the offices to be filled, we continue much longer to enjoy immunity from such discords. This is not the place to discuss the state of political parties: but it must be evident to everyone who has given the subject any consideration that the present tendency is in the direction of dispersion rather than of consolidation; and, instead of two great opposing party organizations, we may have, for some time at least, three or four formidable parties, each with an electoral ticket of its own; thus not only enabling a mere plurality of the popular vote to control the entire electoral vote in every State, but, at the same time, greatly increasing the danger of compelling the House of Representatives to choose the President, and the Senate to choose the Vice-President.

If, however, owing to the multiplicity of electoral tickets, it should happen that more than three persons, voted for as President, should receive the highest and an equal number of votes, then there would be no choice by the electoral colleges, and there could be no constitutional election by the House of Representatives, because, under the Constitution, not more than three persons can be voted for in that body. In such a case, it would be impossible to select the persons to be voted for, and, therefore, impossible to proceed in accordance with the re-

quirements of the Constitution. If more than two persons, voted for as Vice-President, should receive the highest and an equal number of electoral votes, there would be no election to that office by the electors, and there could be none by the Senate, for the reason that two names only can be considered by that body. In all such cases, the electoral system would exhaust itself; leaving the country without an elected Executive, or a Vice-President to take his place.

The electoral system, which, even according to its original design, was never consistent with our theory of government, is, in my opinion, the source of all the greatest dangers to which we are now subject. It was not only inconsistent with our theory of government, but inconsistent with itself; for, if the people were, in fact, incapable of selecting a President or Vice-President by a direct vote, they were equally incapable of selecting competent agents to perform that duty for them.

Under this system, there is no uniform constitutional rule for the selection of electors, and there have been frequent periods in our history when three different methods were in actual operation at the same time; some States choosing by the votes of their legislatures, some by the votes of the people, on a general ticket, and others by the votes of the people in separate districts, each district choosing one elector. It is manifest that, in a matter of so great and general concern as is the election of a Chief Executive for the whole country, there should be perfect uniformity in the proceedings of the different States, in order that the people of each State may exercise their proper share of power in determining the result. If, in one State, the electors are chosen by a vote of the legislature,—not elected for that purpose, and, perhaps, not representing the will of the people on that subject,—and, in another, the whole electoral vote is given to a single person, simply because one set of electors received a small majority or a mere plurality of the popular vote, while, in a third, the electoral vote is divided between two or more candidates, because the popular vote was taken by districts, it is evident that, as regards this important function, the equality of the States and people is destroyed, and that, consequently, great injustice must be done to one side or the other in the contest. The Constitution not only permits all these different methods, but there are many other ways in which electors might be constitutionally appointed, if the legislatures should see fit to adopt them. In times of great excitement, the temptation to resort to unfair means,—especially if such means be legal and constitutional,—to secure advantages over political opponents, may become too strong for successful resistance,

and new methods may be found to prevent a just and equitable distribution of political power among the people.

There are now forty-five States in the Union; and, yet, under the practice now prevailing, a President and Vice-President may be elected by a bare majority of the votes, or even by a plurality, in twelve States, —being three less than one-third of the whole number, —although all the people in all the other States may vote for other persons.

It appears, therefore, that, under the present system, a President and Vice-President may be regularly and constitutionally elected without receiving the votes of either a majority of the States or a majority of the people. This is made both possible and probable by the fact that the minority in each State is not only deprived of its due proportion of power in the election, but its votes are actually appropriated by the majority, or plurality, however small, and counted against the persons for whom they were actually cast.

In a free country, the will of the majority, or of a plurality,—if such a rule has been adopted in advance,—when constitutionally expressed in the form of a law, or in the selection of public officials, ought to govern; and the minority cannot rightfully complain when its votes are merely lost, or prove ineffective. But when they are transferred to, and counted for, the majority, as they are now in choosing electors, there is just cause for dissatisfaction. If this process were necessary, in order to make the final result of the election conform to the will of the actual majority of the people of the several States, there would be no just cause for complaint; but its tendency is to produce just the contrary effect, as shown by our whole experience under the system. It is, therefore, objectionable, in both form and substance. A majority, or plurality, of one in the popular vote of a State is just as effectual to give the entire electoral vote of that State to a single person as is a majority, or plurality, of a hundred thousand, or even a greater number, in another State. It can, therefore, happen that the result of an election will depend, not upon the majorities, or pluralities, received in all the States, or in a majority of them, but upon a bare majority, or plurality, received in a single State; and this has actually occurred more than once.

That each candidate should be entitled to the vote actually received in each State by the electors representing him, is a proposition so plainly just and fair, not only to the candidate himself, but to the people who support him, that it ought to receive general assent. It is not suggested that the popular vote of the whole country should be consolidated, or aggregated, so that a majority, or plurality, of the whole number should

be necessary to elect; but simply, that each State should control its own electoral or Presidential vote, and divide it among the persons voted for, according to the expressed will of its own people, without reference to majorities, or pluralities, in other States.

The electoral system is not only unnecessary, and likely to defeat the will of the people of the several States, in the selection of a President and Vice-President, but, as now conducted, it affords many opportunities and offers great inducements for fraud and corruption in the prosecution of the contest, as well as in the ascertainment and declaration of the result. When the election of a candidate by the electoral colleges can be secured by the purchase, or manipulation, of a very few popular votes in what are called the doubtful or pivotal States, it is scarcely to be expected that the temptation to use improper means, if necessary, to influence public opinion in such States will be successfully resisted by those who are entrusted with the management of political campaigns. In fact, a comparatively small number of votes in any one of our great cities may determine the result in a whole State, and thus throw the State's entire electoral vote to one candidate; and this small vote, however improperly it may have been secured, may decide who is to be President of the Republic for four years.

Another objectionable effect of this method of choosing the entire body of electors from a State in favor of a single person by a mere majority, or plurality, of the votes is, that, in the nominations of candidates for these two great offices, especially for the office of President, political parties are not free to make their selections from the country at large,—thus placing before the people, for their suffrages, the most eminent citizens, without regard to the size or importance of the States in which they reside,—but are, for partisan reasons, practically confined to a few close or large States, whose electoral votes must be secured, in order to succeed. The personal popularity of the candidate among his friends and neighbors, State pride, and even local predilections or prejudices for or against certain State laws or policies, are more relied upon than the experience or ability of the man, or the broad questions of public concern in which the whole people are interested. The question, whether or not the proposed candidate can secure a majority, or plurality, in his own State, is paramount to the question, whether or not he would, if elected, make a good President of the United States; and, when the candidates are thus selected, the masses of the people must support one or the other of them, or their votes will be scattered and wasted. It is obvious that a system which produces such results is

radically wrong, and ought not to be tolerated in a country where the actual majority, or plurality, is supposed to rule, and where all the people are entitled to a voice in the selection of their officials.

The theory of the original constitutional provision was, that the electors appointed in the different States would be unpledged and, therefore, free to choose the President and Vice-President from among the ablest and most distinguished citizens of the country, without regard to partisan considerations. But, ever since the practice of making party nominations for these offices was inaugurated, this theory has been entirely abandoned; and, for a great many years, the obligation of the electors to cast their votes for the candidates of their respective parties has been universally recognized, and in every instance faithfully discharged. The complicated machinery, through which the will of the people was to be filtered and refined, has lost all the effective power it was ever supposed to possess, and remains only as a useless incumbrance and obstruction. Instead of securing an independent body of non-partisan electors, its operation has resulted in the quadrennial creation of a body of automatons, capable of moving in only one direction, without the right to exercise the least judgment or discretion, or the opportunity to change what has already been determined by the vote of the people, except by committing such blunders as may defeat the very purpose for which they were selected.

The fact that each set of electoral candidates is pledged in advance to vote for particular persons for President and Vice-President respectively, in many cases deprives the citizen of an opportunity to vote for his real choice for one or the other of, or both, these places, because he can vote for one set of electors only, and they are bound by their pledge to cast their ballots in a certain way for both offices. The citizen may desire to vote for one of the candidates to whom he is pledged, and against the other, but his desire must be ineffective: he must vote for both, or not vote at all. Fusion electoral tickets are no remedy for this evil, because they, too, are pledged to certain candidates, either absolutely or alternatively. Moreover, a citizen may be unwilling to give his support to any of the candidates having electoral tickets before the people; and, if so, he is compelled, by this arbitrary method of election, to lose his vote, unless he can secure the coöperation of a sufficient number of his fellow-citizens to issue another electoral ticket.

When the people have voted, and the result of the poll has been finally ascertained and declared, the question ought to be settled; but, under the present useless and cumbersome system, the greatest diffi-

culties and dangers are encountered after the popular election has been held. From that time on, until the President and Vice-President have been actually inducted into their respective offices, nearly every step is taken on dangerous ground; and, although Congress has attempted to provide by statute for the orderly settlement of some of the questions that have produced dissension and threatened disorder in the past, the law purports to be mandatory only so far as it relates to the proceedings connected with the certification of the electoral appointments, and to the counting of the electoral vote. Indeed, even as to these matters, it leaves a wide scope for disagreements, with their attendant asperities and dangers.

But it is by no means certain that the statute will be effective as to any of the matters to which it relates; for it seems tolerably clear to the common understanding that, when the two Houses of Congress meet to open the certificates and count the electoral vote, they possess all the powers conferred upon them by the Constitution itself, whatever they are, and no others, and that these powers can be neither enlarged nor diminished by a law enacted by the two Houses themselves.

At any rate, the law may be repealed whenever an emergency arises which makes its operation unsatisfactory to the majority; and, even while it remains in force, every Member of Congress will vote as he chooses upon the question of counting or not counting the electoral vote, or any part of the electoral vote, of a State. In other words, each Member will continue, as heretofore, to decide for himself, according to his own view of the subject, and upon his own responsibility as a Senator or Representative, whether the electoral votes were "regularly given," whether they were "lawfully certified," whether they were given by "lawful electors appointed in accordance with the laws of the States," and every other essential question involved in the proceedings.

Considered merely as a rule providing for the order in which the proceedings of the two Houses shall be conducted, when assembled to count the electoral vote and declare the result, the statute may be effective; but, so far as it attempts to control the judgment or discretion of Senators and Representatives, in determining what electoral votes shall, or shall not, be counted, it is evident that it must fail whenever a serious conflict of political interests shall occur.

The proposition, that one Congress can bind its successors by a law, or, that it can bind even its own Members in the discharge of their duties as representatives of the States and people, will scarcely be seriously insisted upon by anyone. What the moral effect of such a

statute may be, is foreign to the question, because what is necessary to secure permanent peace and tranquility is a fixed, uniform, and authoritative rule for the ascertainment of the popular will, and for its execution when ascertained.

Suppose the electors assemble and cast their ballots on a day different from that provided by law, as was the case in Wisconsin, in 1857; or, that the people should choose electors on the proper day, and these electors should assemble and cast their ballots on the proper day, but the question should arise, whether or not the State was, at the time of the popular vote, or at the time of the electoral vote, legally a member of the Union, as it did in the case of Indiana, in 1817, of Missouri, in 1821, and of Georgia, in 1869, by what settled rule shall it be decided? Suppose the electors should vote for two persons, both citizens of one State, is the whole vote void, or is it void only as to one of the persons voted for? If the latter, which one shall lose it? Suppose that only one return has been made from a State, and there has been no final determination of the "controversy or contest" in the State, and, upon opening the certificates, the objection is made, that the appointment of the electors has not been "lawfully certified," or that their votes have not been "regularly given," or that some of them held offices of trust or profit under the United States, or that they were appointed on the wrong day; or, suppose that all the proceedings were regular on their face, that all the electors were duly chosen and qualified, and found to be so by the State tribunal, but objection is made that the person voted for as President was not a natural-born citizen of the United States, or was not thirty-five years old, or had not been a resident of the United States for fourteen years,—it is not going too far to say that, if the result of the election should depend upon the decision of any one of these questions by a partisan Congress, there would be, at least, very great danger of civil commotion and strife.

The statute leaves the decision of all questions concerning the appointment of electors—which, I suppose, includes the question of eligibility—to the several States, in case they have provided some judicial, or other methods for their final determination; but it asserts for Congress the absolute power, by the concurrent vote of both Houses, to settle, finally and conclusively, even when there has been a judicial determination in the State, all questions relating to the form and substance of the certificates, and to the regularity and validity of the votes given by the electors. Consequently, every question of that character arising must become the subject of controversy in that body.

Of course, the power to decide finally upon the regularity and validity of the votes cast must reside somewhere; and, so long as the electoral system is retained, it must be exercised by the body having the authority to count, or by some tribunal created or designated by it. But the great danger arises from the fact that, under the present method of choosing the electors, the entire vote of the State is, in most instances, involved in the decision; and this vote, having all been returned in favor of one person, may have determined the apparent result of the election. The admission, or exclusion, of the vote of a single State may elect one person and defeat another who, on the face of the returns, was duly chosen; consequently, the interests at stake are so large that it is practically impossible to secure a perfectly fair and impartial decision, and certainly impossible to secure one that would be satisfactory to all. Under the plan which will be discussed hereafter, this result could seldom, if ever, occur, because each person voted for would lose his proper proportion of the rejected vote, and the general result would not be affected, unless one of the persons had secured nearly the whole popular vote in some one of the larger States, and the vote of such State should be rejected.

Difficulties concerning the counting of the electoral vote began in 1805, when the certificates from the State of Massachusetts were opened; and they have occurred nine times since, the last being in 1877, when the result of the election depended upon the votes of each of the States of Louisiana, Florida, Oregon, and South Carolina. The severe test to which the temper of our people and the strength of our institutions were then subjected cannot be safely repeated; and, yet, while the existing system is continued, we are liable to a recurrence of similar troubles at each Presidential election, under conditions not so favorable, perhaps, to the preservation of the public peace.

There is no good reason why these perilous obstructions should not be removed from our pathway, and a plain and just method be adopted for ascertaining and declaring the choice of the people for the two most important offices in the government. If there ever was a substantial reason for the intervention of electors, it has long since ceased to exist; and every consideration of justice, expediency, and political consistency demands that this antiquated remnant of European aristocracy should be eliminated from our system at the earliest possible day. How this can be done, without injustice to any part of the people, and without disturbing the existing constitutional relations of the States, will be considered in another paper.

J. G. CARLISLE.

NOTABLE LETTERS FROM MY POLITICAL FRIENDS.—II.

WITH regard to the letters included in the present selection, and those comprising my next and final contribution, I have assumed that Americans are not without some knowledge of the public history of most of the authors. Accordingly, I have given brief personal references rather than biographical sketches. Most of the letters, though perhaps lacking in style, will, I believe, be found to be something more than second-rate in character and interest. Any comments of my own are merely in elucidation of the subject; my claim being limited to the possession of some first-class friends.

JACOB COLLAMER, born at Troy, New York, January 8, 1791, and SOLOMON FOOT, born at Cornwall, Vermont, November 19, 1802, served long together as United States Senators from Vermont. Both had been liberally educated and were members of the bar. They frequently served in the Vermont Legislature, and had been for several terms Members of the House of Representatives in Congress.

Collamer had served many years as Judge of the Supreme Court of Vermont, with honor to the State and to himself. He had also been Postmaster-General in the Cabinet of Gen. Taylor. In 1855, he was elected United States Senator from Vermont, was reëlected in 1861, and served until his decease in 1866. The conspicuous ability exhibited in the various public positions which he occupied, and his high personal character, induced Vermont to present his statue as a part of her contribution to the Statuary Hall at Washington.

Foot, thrice Speaker of the House of Representatives in Vermont, was elected United States Senator from Vermont in 1851, was reëlected in 1857, and again in 1863, serving until his decease in 1865. He was President *pro tempore* of the Senate for five or six years, and was distinguished for his ability as a presiding officer. It has been said that he was the last presiding officer able to preserve absolute order, so that any Senator when speaking could be heard. As the letter herewith submitted shows, Foot was a great admirer of Henry Winter Davis, of Maryland.

Both these Vermont Senators bore immaculate reputations, and were personally greatly lamented.

WOODSTOCK, VT., Sept. 15, 1857.

DEAR SIR:

I received last evening your very kind letter renewing your invitation for a visit. . . .

I have neither seen nor heard personally from Mr. Foot since we came home. I have heard that he attended the Middlebury College Commencement, where he was made LL. D. I would that our honorary degrees would always confer all the acquirements and ability which their possession implies, especially in my own case; for I cannot but suspect myself *made small by degrees.*

You speak of my being off the Committee on Territories. That was agreeable to my own wish. I have, however, reason to suspect that my duty on the Judiciary will for a time be hardly less troublesome. I refer to the subject of the election of the Indiana Senators, which stands referred to that committee.

Mr. Morrill, whether Kansas is admitted as a State or not, free or slave, the subject of slavery will be and remain a topic of agitation during our lives and much longer; and we shall have occasion for much talk, and I hope more reflection, than has ever yet been expended on the subject. . . . Respectfully, your humble servant,

J. COLLAMER.

HON. J. S. MORRILL.

WOODSTOCK, VT., July 17, 1863.

DEAR SIR:

The hope which I entertained, that our military successes would smooth the way to a quiet and satisfactory execution of our enrollment and draft has been in some degree frustrated by the New York riots; yet I do not despair.

The draft by counties is as equal and fair as one by towns. It is true the distribution into different towns and localities may not be as equable. A particular town may, by the chance, have *more* than its proportion, but it has equal chance of having less; and I am inclined to the belief that, if the individuals in any town were consulted before any excitement were created, they would prefer for themselves and town to take the lottery with the whole county.

Notwithstanding this, I was, and still am, of the opinion that if in the results there was great disparity in numbers drawn in the several

towns, it would produce dissatisfaction. I early stated this view to the Provost Marshal, who, concurring in this view, early laid the matter before the Adj.-General of the State, who communicated with the Governor. Precisely what they have done I know not; but this I know, that nothing has been done in season to produce any effect, if any was desired. The draft by counties has been entered upon pursuant to orders; and the county of Windham has been completed and the names drawn have been published. The sending notices was, by order, suspended by the Board · but yesterday they received orders to proceed, and sent off their notices, which are being served. It seems to me now too late to change.

I send you our village paper of this day, which has an article on this subject, marked. The draft in Windham resulted in distributing it among the towns generally very equally; and it is I understand received there in good spirit very generally. I hope it may so result in our other counties, and that the great conservative, law-abiding principle of the people of Vermont may be more conspicuously manifested in increased proportion as it fails in slave-holding States, or in our corrupt cities.

There is another branch of this subject which enhances my apprehension,—that is, the construction which seems to have been put on the clause of the law relating to commutation money. I am entirely confident that Congress intended to put those who furnished substitutes and those who pay money "for the procuration of such substitutes" precisely on the same footing. If the Government receive money to procure substitutes and fail to procure them, and then (keeping the money) proceed again to draft the persons paying it, this will be submitted to, if at all, with murmurs deep-toned with justice in their echo.

Respectfully, your humble servt.,

J. COLLAMER.

HON. J. S. MORRILL.

RUTLAND, 9th Nov., '63.

HON. J. S. MORRILL,

Dear Sir: Although it is out of my beat, and out of my province, nevertheless, my voice is for Henry Winter Davis, "the noblest Roman of them all," for Speaker of the House, and I am sure you will second the motion. . . . I am gratified to learn that your family are to be with you this winter. With kind remembrance to Mrs. M.,

I am truly yours, SOLOMON FOOT.

HORACE GREELEY, born at Amherst, New Hampshire, February 3, 1811, is best known as the editor and founder of the "New York Tribune"; but he was for a brief time a Member of Congress. In the State of New York, few newspapers wielded a larger political influence than the "Tribune," though several had a larger circulation.

Among journalists, Greeley was the ablest writer on the subject of a protective tariff we have had since the time of Hezekiah Niles, the editor of "Niles's Register." Although with a rigidly pronounced Republican partisan record behind him from boyhood, Greeley, in 1872, having become hostile to President Grant, accepted the Democratic nomination for President, and the party generally voted for him though often with puckered foreheads. Of course the defeat was like that of the same party in 1896, when they borrowed a Populist for their Presidential candidate.

NEW YORK, Feb. 22, '59.

My DEAR SIR:

We have your bill in type, but are disappointed in not hearing that it was moved to-day.

I do not see why you did not join in defeating Phelps's bill and then move yours as a substitute. If Phillips wanted to move his own bill, let him do that too. The more yeas and nays we get on the record the better; and as we can get no more than that, we ought to make the subject as prominent as possible.

I am vexed with you for letting in coal at $1 per ton in your bill. That duty is not worth one mill to the coal interests, but will be used to prejudice the ignorant poor of the cities against yours or any such bill. It will not raise the price a half-penny per ton, nor increase the consumption of American coal a hundredweight per annum. Ten cents per ton more on iron, would be worth more to the coal interests than this duty. Then why put it on? Stupid as Pennsylvania is, the Pennsylvanians must have known better. Who is this duty to humbug? If I ever can be allowed to say a word for your bill, I shall gladly do so.

JUSTIN S. MORRILL, Yours, HORACE GREELEY.
Washington, D.C.

NEW YORK, Feb. 25, 1859.

My DEAR SIR:

The practical objection to the coal duty lies just here:

1. It won't help the coal men, nor anybody else that ought to be helped, one farthing.

2. Coal has been sold for a year or more below the cost of production and must advance, especially if any iron and other manufactures are set in motion. Well, this advance will be charged home upon the Black Protective Tariff by the demagogues. Our poor shoemakers, blacksmiths, and laborers of all kinds will be told, "You are to give a dollar extra per ton to the mine-owners and coal-monopolists because of the Black Tariff," and it will influence thousands of votes. Still, if this must be, it must.

I still do not see why you should not have voted at first to defeat Phelps's bill and thus brought the subject directly before the House, then let Phillips move his bill as a substitute and have it voted down by the help (or neglect to vote) of some Republicans from the Western States, and then move your bill as a substitute and give the Pennsylvanians, Hobson's choice, this or nothing. Had this course been taken, I am confident your bill would have been through the House ere this.

HON. J. S. MORRILL. Yours, HORACE GREELEY.

An autograph letter of Mr. Greeley's is reproduced on the following page. For the benefit of those who may be unable to decipher it, I subjoin the text:—

OFFICE OF THE TRIBUNE,

New York, Mar. 18, 1862.

DEAR SIR:

If newspapers are to be taxed at all their Advertisements can bear it best; as they are a source of profit, while circulation is not.

We can stand 3 mills per pound on Paper; though that will be a pretty productive tax; I think that item alone will cost The Tribune establishment over $7,000 per annum, all to come out of profits that can't be made in these times. Still, taxes must be put on, only *do* give us some substantial Retrenchment—especially of Mileage—to go to the People on.

Yours, HORACE GREELEY.

J. S. MORRILL, ESQ., M. C.
Washington.

GEORGE PERKINS MARSH, born at Woodstock, Vermont, March 15, 1801, was graduated from Dartmouth College in 1820, where his distinguished father, Charles Marsh, was a graduate in 1786. George became a citizen of Burlington, studied law, and was elected to the Vermont House of Representatives in 1835. In 1842, he was elected to the United States House of Representatives, and there continued until appointed,

Daily Tribune,
$6 per Annum.
Semi-Weekly Tribune,
$3 per Annum.
Weekly Tribune,
$2 per Annum.

Office of The Tribune,

New York, Mar. 18, 1862.

Dear Sir:

If newspapers are to be taxed at all their advertisements can bear it best; as they are a source of profit, not till circulation is not.

We can stand 3 mills per pound on Paper; but even that will be a hefty reduction; still that item alone will cost The Tribune to pay over $7,000 per annum all to come out of profits that can't be made in these times. Still taxes must be had and so Give us some absolutely Retrenchment — economy of Misery — to go to the People on. Yours,

Horace Greeley

J. S. Morrill, Esq. M.C.
Washington

by President Taylor, in 1849, Resident Minister to Turkey. He also had a special mission to Greece. In 1861, President Lincoln appointed him Minister to Italy. He was widely known as an eminent author and scholar. The following letter from Turin shows the deep interest he felt in the great war, then undetermined, in the United States:—

TURIN, Dec. 31, 1863.

MY DEAR SIR:

. . . . . .

I am glad to learn that Vermont has accepted the provisions of the law for aiding in the establishment of agricultural colleges, which, it is not too much to say, is wholly due to your efforts. I have not seen the Act of the Vermont Legislature; but I hope the success of the measure will not be defeated, as I infer there is reason to fear, by local interests and local prejudices. The interests of agriculture and of productive industry in general have now become of such vast importance —especially since the latter have received such a prodigious impulse from the material demands of the war—that they deserve a more distinct recognition and patronage than they have yet enjoyed at the hands of the Federal Government. It seems to me quite time that the administration of these great interests, so far as it falls within the scope of governmental action, should be committed to an independent department. Most European governments have a ministry of agriculture and manufactures, to which, in some cases, the supervision of foreign commerce is added. I can hardly doubt that the creation of a separate department to be charged with these objects would be an advantageous and popular policy.

. . . . . .

I make no pretensions to financial skill; but it has occurred to me that our Government might, at the present moment, perhaps derive advantage from the sale of life and limited annuities, as the British Government long practised, and, for anything I know to the contrary, still does. Many incorporated companies in the U. S. grant annuities with much profit; and I see no reason why a source of immediate income, so likely to realize a large amount at once, should not be adopted by Congress. . . .

The reconstruction of the "Union as it was" would fix upon us slavery for ever; the Confederate debt would be assumed by Congress; we should wage wars of conquest upon all neighboring soil suited to slave labor; and should end by a despotism or a new civil war which

would plunge us into an anarchy as destructive to all the interests of civilization as heathen barbarism itself. . . .

I know you have no leisure for correspondence; but if, by any chance, an unoccupied hour falls to your lot this winter, I should be glad to hear from you.

Very truly yours,

GEORGE P. MARSH.

HON. MR. MORRILL.

ISRAEL WASHBURN, JR., born at Livermore, Maine, June 6, 1813, was one of the distinguished brothers who were in Congress together, though Representatives of different States. Israel was the eldest of the trio, and had been Governor of the State of Maine. He was appointed by President Lincoln, in 1863, Collector of the Port at Portland.

After Mr. Blaine had been elected to Congress, he was commended to me by the following letter from Mr. Washburn:—

PORTLAND, Dec. 1st, 1863.

MY DEAR MORRILL:

I want you to know Mr. Blaine, the Representative from the Augusta District. You will find him one of the most able and brilliant men in the House, and altogether worth knowing.

He would be a most admirable man for New England on the Committee of Military Affairs, as he has large acquaintance with these matters. If you will take a little pains to see that this direction is given, you will do a good thing for the country and secure a man who will not permit the rights of New England to be overlooked. You are a good boy to be reëlected—Long may you wave! because you never *wiver*. . . . Yours truly,

I. WASHBURN.

P. S. If your thougnts are scattered, come here and let me "collect" them. I can't my own.

JAMES GILLESPIE BLAINE, born in West Brownsville, Pennsylvania, January 31, 1830, removed to Maine, where he became the editor of the leading Whig newspaper, Member and Speaker of the Maine House of Representatives. In 1862, he was elected to the House of Representatives, as a Member of the Thirty-eighth Congress. He was twenty years my junior and comparatively a young man, when I first met him. After serving six years, he was elected Speaker. In 1876, he was elected to the United States Senate, where he served until appointed Secretary

of State by President Garfield, and subsequently also by President Harrison.

Mr. Blaine was well equipped as a debater, being possessed of much intellectual power, a staunch memory, and ready resources. He was fertile in ideas of legislation, reaching far ahead, and of more than merely temporary importance. Socially he was very attractive; and his devotion to his wife and children made his home an ideal one.

The first of Mr. Blaine's letters here presented was written mainly to call my attention to his idea of some amendment to the Constitution, by which the taxation of exports might be authorized. It seems, also, that he had doubted some statement made by me in a public address as to the agricultural products of Vermont in comparison with other New England States, but now conceded its correctness. Mr. Blaine was a statesman whose supporters were more enthusiastic than those of any other Presidential candidate since the career of Henry Clay.

AUGUSTA, ME., Nov. 15, 1865.

MY DEAR SIR:

"I acknowledge the corn" and the hay too. I was wrong, according to the Census statistics. My error was caused by taking the *State returns* as made triennially.

You beat us largely, I was aware, in general agricultural products; and I can hardly understand why our valuation should exceed yours so much—190 millions against 122 millions. I presume the difference is to be accounted for by Timber and Navigation interests.

I am afraid we shall lose you from the House. The death of Judge Collamer is, I presume, a call "to go up higher" for you. Well, the Senate's gain will be as great as our loss. We shall badly miss you in matters financial.

I want to convert you to my view on the *export matter;* and, as my speech has the merit of brevity, I am less modest in asking you to read it. Lest you may have mislaid the copy I sent you, I now enclose another.

An export on cotton and tobacco, and a thoroughly executed excise on whiskey ought (with Tariff duties) to yield enough to run the "Government machine." Say 250 to $275,000,000, and then we could cut off a vast number of these vexatious taxes. In haste,

Very truly yours,

J. G. BLAINE.

HON. J. S. MORRILL.

AUGUSTA, ME., Aug. 19, 1866.

MY DEAR MORRILL:

Yours received. I am just at this time *in medias res.* We shall give a good account of ourselves the week following your election. . . .

You have arranged your matter very properly,—or rather your friends have arranged it for you,—as I know very well that personally you have nothing to do with "arrangements" either good or bad. But it is a good thing; and it is far better for your personal ease and for party harmony than to have simply beaten P——d in the Legislature—as you would have done—and then left him a chronic sore-head.

You can now "set your house in order" for a twelve-year service in the Senate, at least. I fear you will not take so much interest in the lower branch next winter, after your formal election to the "House of Lords." You will be somewhat in the position of a college student between Senior examination and Commencement Day. Perhaps your habits of methodical industry will make you overcome this tendency—but you will find it quite difficult.

My health is becoming quite firm. We have had most delightful weather for three weeks. Pitt[1] is looking very well. I saw him a few days since.

Andy[2] has begun to decapitate in this State. He removed the principal Collector of Customs in my District last week—substituting a *backsliding* Republican, who was a creditable soldier.

With regards to your family and apologies for this long and hasty scrawl, I am as ever,

Your friend sincerely,

J. G. BLAINE.

HON. J. S. MORRILL.

AUGUSTA, ME., 25th Oct., 1866.

MY DEAR MORRILL:

Accept my congratulations on your election to the Senate, and my sincere regret at losing you from the House. The Senate's gain in this instance is our loss indeed.

I am completely puzzled to know what we shall do for a chairman of Ways and Means. Hooper will expect it, but is totally unfit. Garfield and Conkling both expect it; but neither has the requisite qualifications, though each has talent in his way—Conkling far more than Garfield. Were I to select or to choose on my best judgment, I should

[1] William Pitt Fessenden. [2] Andrew Johnson.

take Boutwell, though, to use Parson Brownlow's phrase, he "does n't exactly fill the bill." Colfax will become the Speaker, and will probably give the chairmanship to the West, in which event, if he could cure his infirmity of temper, Schenck would be the best man. He is industrious, strictly honest, and able in debate; but he has too much of the "d——n-yr.-eyes" manner to get along with the House on such important measures as the Ways and Means have to deal with. You know he is in a perpetual stew while managing a bill from the Military Committee.

From the standpoint of an outsider, I should judge that the other senatorial elections in your State were the best that could have been made for party harmony and general good feeling.

Hastily and very sincerely,
Your friend,

HON. J. S. MORRILL. J. G. BLAINE.

WILLIAM PITT FESSENDEN, born at Boscawen, New Hampshire, October 16, 1806, was graduated from Bowdoin College in 1823; studied and practised law in Portland. He was several times elected to the Legislature of Maine, was a Representative in Congress from 1841 to 1843, and declined reëlection. He was elected a Senator in Congress from March, 1853, and reëlected in 1859, serving as chairman of the Committee on Finance. In 1864, he was made Secretary of the Treasury, in place of Secretary Chase, but was reëlected to the Senate the same year, having resigned his seat in the Cabinet, and was again placed at the head of the Finance Committee.

As a lucid and keen debater, Mr. Fessenden had no superior in the Senate. He carried his bills by being master of the subject, and by compactly saying what was necessary and no more.

Although Senator Fessenden had made bitter campaign speeches against President Johnson, yet he voted against his impeachment.

PORTLAND, ME., Sept. 19th, 1866.

MY DEAR MORRILL:

If I *can* go away anywhere out of town, I will come and see you, and will give you notice. Just now I am occupied in building a block of stores which is not far enough along to be safely left to the architect and builders. It is much easier in my opinion to reconstruct a State. Anyhow, I could do it much more to my satisfaction; for I should have some idea of what I was about. . . .

I did not mean to take any active part in our canvass, but the President's outrageous attacks upon Congress forced it upon me.

Your adversary —— —— learned, I see, that discretion was the better part of valor, and saved himself in season. I congratulate you somewhat, and myself more. . . . Yours most truly,

HON. MORRILL, W. P. FESSENDEN.
Strafford, Vt.

CHARLES SUMNER, born at Boston, Massachusetts, January 6, 1811, after completing his education at Harvard University and Law School, with added years at institutions abroad, had reached the age of forty years when, in 1851, he was elected as a United States Senator from Massachusetts. The senatorial candidate of the Whig party in Massachusetts was defeated by Mr. Sumner through the combination of the Anti-Slavery with the Democratic party; the latter securing Mr. Boutwell as Governor. It was the era of popular lectures; and Mr. Sumner was then mainly known as a platform orator of distinguished culture and fine personal appearance.

In the Senate, his speeches soon attracted public attention, being very radical, prepared with great care, committed to memory, and well delivered. They had a wide circulation. Sumner's political speeches subjected him to sharp criticism; especially his address in 1856, in reply to Senator Butler of South Carolina, when Sumner spoke with severity and with some stinging personal references. Following this, came the brutal assault on Sumner by Preston S. Brooks, a relative of Butler, and a Member of the House of Representatives. Sumner did not recover from this for several years.

Not long after 1861, the majority of the Senate became Republican, and Mr. Sumner was made Chairman of the Committee on Foreign Relations, which office he for many years retained, rendering valuable service.

BOSTON, Sept. 11, '64.

DEAR MR. MORRILL:

To congratulate you on your return again by your constituents is out of place. I can well understand that you would be glad to retire, but you are needed at Washington. . . .

It looks as if the Democracy would be divided beyond all chance of unity, so as to leave us an easy victory. Is it not so?

Ever sincerely yours,
CHARLES SUMNER.

HON. JUSTIN S. MORRILL.

P. S. Books. Pray see that our Senate bill is put right. It is now barbarous. Let me suggest two changes:

(1) That the duties should be reduced from 15 to 10 per cent. This will be as productive to the revenue, more advantageous to book readers and scholars, and better calculated to relieve the Bill of the opposition of an influential class.

(2) That books published 30 years ago should be duty free.

Painting and Statuary. Pray see that these words are restored in the free list before the proviso—"if imported in good faith as objects of taste and not of merchandise." The Senate amendment is a barbarism.

To this I replied as follows:—

STRAFFORD, VT., Sept. 1864.

MY DEAR SIR:

Your favor of the 11th inst. is at hand. I agree with you that the Democracy will be divided, and that we shall win the election. They will be more and more divided as their chances of success diminish. But their mode of conducting the campaign will give our institutions a heavy strain and consign some of the component parts of the party to infamy. Those proud to wear the name of "copperheads," as a badge of honor, mean to create a counter-revolution that will carry the bulk of the Western and Middle States with the South, and so let the pestilent resolutions of '98, with all modern partisan improvements, triumph. They are now ferocious, and would, if they could, frighten the Administration. Failing in that, the conspirators mean to create a diversion in favor of the Southern ragged and sorely pressed legions, even if violence shall be necessary. Whoever administers the government, now carries the fortunes of our country on their backs. The people know the Chicago Platform, and whose team is harnessed to it; and I have full confidence that American civilization will prove equal to the crisis.

Vermont and Maine have opened the campaign as it should go on to the end. The old delegations are returned with improvement in Maine. I suppose this is as it should be; though in my own case, had it not appeared like cowardice, I should have insisted upon a discharge.

I trust there is no doubt of the return of Mr. Hooper and Mr. Rice from Boston. They are both valuable men. Mr. Hooper, with his wealth, it is true, might study his ease and prefer to escape the labor of our overworked Committee of Ways and Means; but I hope he will

Washington
29th March '6.

My dear Sir,
I beg to call your
attention to the en-
closed letter from an
excellent Lawyer —
Boston. Yours faithfully,
Charles Sumner

The Hon'ble
Justin S. Morrill

Washington City 1864

J. S. Morrill Esq

My dear Sir too much to
stay in the House if
a quorum should
arise I could stay
& answer your letter
Sincerely yours

seek rather than avoid what seems to me to be his duty. I should deplore his absence from the Committee.

I have not seen Judge Collamer since his return to his home; but I have heard that he is quite well.

Very truly yours,

JUSTIN S. MORRILL.

HON. CHARLES SUMNER,
Boston, Mass.

The letter from Mr. Sumner, reproduced on the previous page, is inserted merely because it is thought some readers of THE FORUM may like to see his autograph. The "eminent house" referred to was that of Henry L. Pierce, a manufacturer of chocolate, who wanted cocoa, as a raw material, made duty free.

Owing to want of space it was not possible to include in my last article an autograph letter of Mr. Thaddeus Stevens. One is now given in fac-simile on the same page as Mr. Sumner's. The text of his letter is as follows:—

WASHINGTON CITY, July 2d, 1864.

J. S. MORRILL, ESQ.:

I find myself too unwell to stay in the House. If a question of quorum should arise I will get up and come over, if Willie comes for me.

THADDEUS STEVENS.

Many persons claim that handwriting presents a true index, or at least a clue, to the character of the writer. If so, that of Mr. Stevens offers a puzzle.

JUSTIN S. MORRILL.

SOME LESSONS OF THE YELLOW FEVER EPIDEMIC.

AMERICANS do not sufficiently realize what a humiliating reflection upon the enlightenment of the western hemisphere, from a sanitary point of view, a yellow fever epidemic constitutes. In Europe, the disease is now practically unknown; the last serious epidemic having been that of Lisbon in 1857. Between 1801 and 1825, however, the ports of Spain were frequently and severely visited.

Yellow fever now belongs to the western hemisphere, from which also it should be extirpated, as can be done, if the proper kind of international public opinion be brought to bear upon the subject. While the disease is not indigenous to the United States, being always an importation, its visits are, nevertheless, so regular, that since the beginning of the century there have been only nine years in which it has not appeared here. Its natural breeding-ground is furnished by the heat, moisture, and filth of tropical seaports. These conditions are found in certain cities of the Spanish main, which, lacking proper sanitary regulations, have become perpetual foci of infection; and Havana is the worst of them. There the disease prevails during the entire year, a steady supply of fuel for its virulent flames, as it were, being furnished by the new-comers. The natives generally are immune to it, having usually had the malady, in a mild form, in childhood.

For us the position is a simple one: Since we have such neighbors, we must either bring about a reform in their sanitary conditions and practices or continue to run the risk of an annual invasion of this terrible disease. Thirty-five of the visits of yellow fever to this country since 1800 are known definitely to have been from Cuba; and of these, twenty-three have been clearly traced to the port of Havana. Europe's protection against Cuba, in this particular, lies in her remoteness. A disease which lurks in a vessel starting across the ocean, has time to develop and manifest itself so clearly that the quarantine officials on the other side can discover it on the vessel's arrival. But with Cuba hardly six hours from Key West, there will always be a percentage of danger, however stringent the quarantine regulations may be, if the conditions remain as they are, unless indeed we assume

a policy of absolute non-intercourse with the island during the summer months.

The harbor of Havana is a cesspool, which for years has received the drainage of the city; besides it is a virtual *cul-de-sac*, which cannot be scoured by the tides or by fresh-water streams. The wharves on the Havana side of the harbor are notorious as sources of infection. An examination of the records of the quarantine stations on the South-Atlantic and Gulf coasts for 1894 shows eleven cases of yellow fever, all having been taken from vessels arriving at the Dry Tortugas station from the wharves in Havana. Two of these wharves, the Tallapiedra and the San José, are especially dangerous. Under the Tallapiedra empties the sewer from the military hospital, where the yellow fever patients from the army are treated. It has been said that no vessel with a non-immune crew on board has ever been tied to this wharf without yellow fever appearing among them. So well known is it as a danger-point, that sailors call it "Dead Man's Hole"; and so great is the danger of tying up to it, that captains of American vessels have been known to pay for the privilege of discharging cargoes on lighters in the open bay; the payment being made by deduction from freight charges, amounting frequently to $200 or $300. American captains have frequently asserted that the United States Government should not allow vessels to go to this wharf.

With regard to vessels from Havana, the quarantine regulations enforced at all ports of the United States south of the southern boundary of Maryland between May 1 and November 1 are so rigid as very seriously to hamper commerce, besides entailing a constant care and expense upon the United States Government. Every vessel arriving from Cuban ports, whether yellow fever has been aboard or not, is required to discharge ballast at quarantine, to have its hold washed and filled with fumes of sulphur, and to place all the dunnage of the crew and the baggage of passengers in steam disinfecting chambers. After completion of disinfection, the vessel is held from three to five days before being allowed to enter port. Some exception is made in the case of iron steam-vessels bringing passengers; but in such instances other special and stringent requirements are added. The regulations absolutely forbid persons not immune to yellow fever entering Florida from Cuba during this period. By an immune person is meant one who has had yellow fever, or has resided in a yellow fever locality for a period of ten years. This rule, therefore, excludes children under ten years of age; and although efforts have been made to

abolish this regulation, no health officer ventures to recommend its abrogation. Passengers from Havana not immune to yellow fever, on arrival at Northern ports, such as New York, are detained in quarantine until the expiration of five days after leaving Havana; and several instances of the development of the fever at the New York quarantine amply demonstrate the wisdom of this rule. In order that the abovementioned regulations may be carried out, the United States maintains two inspectors in Havana to give the proper certificates to passengers leaving that port for the United States.

The seeming necessity for such stringent and costly regulations as these is a sad commentary upon the sanitary enlightenment of the age. While no one doubts that, under present conditions, this strict code has saved us many a dread visitation, yet, on the other hand, it is equally certain that Havana need no longer be a plague-spot. Sanitary engineers have repeatedly shown that an artificial outlet to the harbor would permit the waters of the Gulf to wash through and give the city wholesome surroundings. Then, if the sewer-mains were carried out to the sea, the old wooden wharves destroyed, and a few measures of ordinary sanitary science adopted, the city as a breeding-place of pestilence would be a thing of the past.

The experience of Vera Cruz is enlightening. That city was formerly a menace to the United States almost as great as Havana; but President Diaz, with whom I discussed the subject last November, assured me that the disease had been practically eradicated from that city. The statistics certainly bear out his contention, that the improvement has been extraordinary. Under his wise leadership, commerce and hygiene combined to bring about great engineering changes in the harbor; and these improvements will be carried still further. It is not likely that any great public work will be undertaken in Havana while the political condition of the island remains so much disturbed as at present; but, on the restoration of peace, it should be the first concern of the United States to insist upon better sanitation there. Secretary Olney, last year, addressed a letter on the subject to the Spanish Minister; but, of course, under the circumstances, immediate results could not be expected.

But what can be done to enforce the intelligent regulation of public hygiene in places where the local sentiment does not compel such? On this point, the second of two resolutions adopted at a meeting of the American Public Health Association, held in Buffalo, October, 1896, indicates, in general terms, a course of action. The resolutions recite:—

"Whereas, Yellow fever is believed to be the most subtle and dangerous of all epidemic diseases; and

Whereas, It is ordinarily conveyed into one country from an infected seaport of another; and

Whereas, The continued and persistent presence of this disease in any seaport is believed to be unnecessary, and may be prevented by proper engineering and other sanitary measures;

Resolved, first. That it is the duty of every government possessing seaports thus infected to institute such engineering and other sanitary measures as will remove this menace to the seaports of other nations; and

Resolved, second. That it is the duty of all governments continuously threatened with invasion of yellow fever from a seaport in which the disease is allowed to persist, to make such representations of the government in possession to the offending seaport as will induce it to adopt the sanitary measures necessary to remove this obstruction to commercial intercourse and menace to human life."

Of specific proposals there are many. Since this disease is exclusively a western-hemisphere affair, perhaps the Bureau of American Republics might consider the matter and devise means of caring not only for Havana, but for other plague localities as well, such as Colon and Rio de Janeiro; the latter being almost as bad as Havana, but, by reason of its greater distance, less dangerous to us. It would pay the commercial nations of the New World to undertake this sanitary regeneration, even if they had to bear the expense themselves, rather than endure the constant fear of yellow fever. In addition to the loss of 15,934 lives, it has been estimated that the epidemic of 1878 cost the United States in commercial and industrial interruption at least $100,000,000. If the public sentiment of the western hemisphere could be sufficiently aroused, there might be found, through diplomacy, a way of enforcing a righteous sanitary law upon the inhabitants of every country. It has even been suggested that the President of the United States might be empowered to declare an embargo upon commerce between any "unsafe" port and the ports of the United States. This may be impracticable; but it would surely create a strong sentiment among our merchants and traders that might be effective at the other end of the line.

Several sanitary conferences have been held between the republics of this hemisphere; but, while the quarantine regulations framed and adopted in consequence have been perfect on paper, no practical results for the United States have been derived therefrom. Since quarantine is essentially a defence to be maintained by all countries individually, no plan is feasible which will infringe in the slightest degree upon the sovereignty of any nation. International quarantine stations, for ex-

ample, to be operated jointly by the several governments, would be as impracticable as international forts or ships of war. Each nation must be responsible for its own sanitary condition, and be made to act upon that responsibility by such an international public opinion or commercial necessity as it dare not disregard. It is outrageous that yellow fever should continue to menace us, in the face of the scientific progress of the closing years of this wonderful century.

While epidemics of this sort continue to disturb our peace, and we are waiting for our Spanish-American neighbors to bestir themselves, certain improvements in our own methods of dealing with the matter are possible. In my opinion the National Government should have full charge of maritime quarantine. No attempt will be made in this paper to discuss the general subject of a strictly national quarantine; but I wish to say here, with reference to the Marine Hospital Service,—which now has the administration of the national quarantine law,—that no branch of the Federal Government is freer from ulterior and political influences. A strict system of competitive examinations for all places prevails; and promotions can be earned only by successfully passing through the lower grades of service.

The Marine Hospital Service will be a century old next year. It was originally established by Congress for the care of sick and disabled seamen of the merchant marine at points remote from their homes; but, so many other duties, varied in character, have been added from time to time, that now its name no longer indicates its functions. Yet this original duty furnishes an excellent foundation for carrying out the more modern extensions of the Service. In steadily caring for the mariner, the Bureau is necessarily represented at every port of consequence on the sea-coast, rivers, and lakes of the United States. As a result, an officer is always at hand for any emergency,—a case in point being the present outbreak at Ocean Springs. Passed Assistant Surgeon Wasdin, who was at the time in Mobile, visited Ocean Springs with the Health Officer of Mobile, to make a diagnosis of a case which had appeared there. He promptly declared the disease yellow fever, a diagnosis proved correct by the *post-mortem* examination. Among its numerous duties, the Marine Hospital Service is charged with maintaining twelve large national quarantine stations, as well as with the enforcement of the national quarantine regulations by all State and local authorities. In carrying on this work it makes use of a staff of one surgeon-general, fifteen surgeons, thirty-four passed assistant surgeons, seventeen assistant surgeons, eighty-two acting surgeons,—principally in small

ports that do not warrant the assignment of a regular surgeon,—and a corps of sanitary inspectors, some of whom serve in foreign ports, such as Rio de Janeiro, Havana, Santiago de Cuba, and Yokohoma.

The expenses of caring for the sick and disabled seamen is met by a fund derived from a tax on tonnage; but national quarantine is maintained through an annual appropriation by Congress of $137,000. In addition, a fund is provided annually for emergency use in times of epidemic.

If a strictly national quarantine service were established, the State boards of health would be relieved from maritime quarantine responsibilities, and would thereby be enabled to devote their energies more directly to local needs, such as the sanitation of cities, the improvement of water-supply, the destruction of garbage, the cleaning of the streets, the disposal of sewage, etc. Nearly every State has its board of health; but some of them are deficient in legal rights. The Louisiana Board of Health, for instance, has no power in the parishes: it deals principally with the city of New Orleans and the maritime quarantine near the mouth of the Mississippi.

In this connection it is gratifying to note the vast improvement in local sanitation which has been made in some of the cities of the South as a result of past yellow fever outbreaks. Brunswick, Georgia, since 1893, has introduced the Waring system of sewerage, which has resulted in a lowering of the level of the ground water, and increased the general health of the city. Memphis was in a very unsanitary condition when seized by the epidemic of 1878; but a new sewerage system has given that city a marked feeling of security as compared with the former dread which the sound of yellow fever inspired.

Many other notable improvements in methods of sanitation have been made since the epidemic of 1878, due to the fact that during the last twenty years the attention of scientific men has been more than ever directed to this subject. The use of formaldehyd gas, adopted within the past year, is a marked advance in practical disinfection. This gas does not affect textures or metals in any way. Steam-chambers were unknown in 1878; while now nearly fifty are used with very satisfactory results. The regulations of the Treasury Department intended to prevent the spread of yellow fever are purposely broad in character, so that under them specific regulations may be made as the circumstances demand.

The first practical requirement toward checking the spread of the disease lies in its prompt recognition and in public notification of its

presence. Every epidemic of yellow fever in the United States, thus far, has been preceded by doubtful cases; and, as a rule, there has been a disposition among local physicians to conceal a threatened outbreak as long as possible. The diagnosis of this fever is not always easy; and general practitioners make frequent mistakes. Yellow fever was known to be in Brunswick, Georgia, in 1893, some time before the public learned of it; and in another outbreak one physician is known to have remarked that, if "the good Lord does not send a frost pretty soon," he could conceal his cases no longer. On the first intimation of suspicion, therefore, it is the practice of the Marine Hospital Service to send an expert to investigate; and from May to November the health officials in the southern half of the United States are kept constantly on the *qui vive* for yellow fever outbreaks. Acting Assistant Surgeon John Guiteras, of the Marine Hospital Service, has visited successively Mississippi, Louisiana, Alabama, Texas, and other States where suspicion existed, and has found the disease in all the places visited except Point Pleasant, Missouri.

To prevent the spread of the disease, the following precautionary measures are adopted: It may be taken for granted that on the appearance of the first case or two of yellow fever there will be considerable depopulation; and, assuming that the infection has not become widespread, this is to be desired. But, so soon as the disease becomes epidemic, egress can be allowed only under very careful restrictions. People must go by through train to such places either in the North or in the mountain resorts as are willing to receive them, and where health officers will agree to keep them under observation. A detention camp is put in operation, preparation for which is undertaken when the first case appears. Great care is exercised to keep the camp itself from becoming infected, since it is not intended for the reception of the sick. All the baggage that goes there is thoroughly disinfected; and the visitors are held for ten days, to demonstrate that they are not infected. Should a case of yellow fever appear among them, the patient is immediately taken to the camp hospital, which is usually established about a mile away. After a detention of ten days, those persons who have shown no signs of the disease are given "free pratique,"—a certificate showing that they have been through the camp and have not contracted the yellow fever. This certificate is honored by all quarantine authorities; and its holder is allowed to go where he chooses. One such detention camp established by the Marine Hospital Service is now in operation at Fontainbleau, ten miles from

Ocean Springs, which has given refuge to a large number of visitors; another at Mount Vernon Barracks, twenty-five miles north of Mobile; and a third near Avondale, fifteen miles west of New Orleans. The last was established principally for laborers intending to leave the city to go to work on the sugar-plantations. This camp is necessary to prevent them from carrying yellow fever into the parishes. All mail leaving the suspected districts is disinfected. Freight is also classified; and such as can convey infection is treated before leaving Mobile or New Orleans. Baggage, unless bound for a point north of the Potomac, or to a few places in the mountains, is carefully disinfected. There is practically no danger of the spread of the disease north of the latitude of Maryland, particularly in the fall of the year.

How the yellow fever gained admission to the United States this year is still an unsettled question, which it is not the purpose of this article to discuss. It may have reached this country from any one of a number of Central or South American ports; but the probability is that it came from Havana. Ocean Springs, where it first appeared, is not a seaport; but the infection may have reached there through one or may have been brought by Cuban insurgents, who made the village their temporary headquarters.

While this year's epidemic does not compare in severity with that of 1878, it is considerably more extensive than that of 1893, and with a larger percentage of fatalities. Out of 1,076 cases at Brunswick, Georgia, there were 46 deaths in 1893; while from the present outlook the percentage this year will be between 20 and 23. In the bulletin issued September 29, there were reported in all 620 cases and 59 deaths; and this last number will doubtless be swelled somewhat when all the cases reported shall have run their course.

WALTER WYMAN.

THE RELATION OF PRODUCTION TO PRODUCTIVE CAPACITY.—I.

In all the consideration that has been given during the past few years to the subject of non-employment and how to care for the unemployed, little or nothing has been said of the relation of actual production to the productive capacity of manufacturing establishments. As the industrial depression is now passing away, it is not likely that there will be as many theories of reform advanced as there have been in the past; but undoubtedly wiser measures than any that have been adopted will be suggested, as the result of experience and of the opportunity of judging dispassionately the elements of depressions and their social and economic effects.

The common idea, that an army of unemployed springs into existence as soon as a depression begins to be felt with any severity, arises as much from popular sentiment—fear of the future—as from the facts themselves. We hear of the stoppage of great works, and at once infer that many thousands of men, ordinarily employed, are without the means of supporting their families; and the statements grow until the army of the unemployed assumes vast proportions. Calculations, suggestions, methods of prevention, are based on the assumption that there are millions of men seeking employment, and that production is greatly reduced.

These exaggerated statements lead to many pernicious views and false assertions. There is now going the rounds of the press a statement, attributed to the author of this paper, that if the productive industries of the country were run to their full capacity, everything necessary for the support of the people could be produced in thirty-seven and one-half days in the year. Such statements indicate a thorough misapprehension of the conditions of production, of the amount of running-time in manufacturing industries, and of the number of people necessary to produce all the things that enter into consumption.

The question of the unemployed and, consequently, the amount of non-employment at any time, as well as the relation of actual production to the producing capacity of our manufacturing industries, should

be discussed together; and it may be that, with a fairly good understanding of the latter, we may be better able to comprehend methods of reducing the number of unemployed and of restricting the amount of non-employment. The statistics for a comprehensive consideration of this twofold subject are very meagre; nevertheless, there are sufficient facts to warrant some fairly correct conclusions. In the present article, the amount of production in proportion to the full capacity of manufacturing industries, and the number of persons actually employed in production as compared with the number necessary to carry on works at the full capacity, will be considered; later on, the more personal question of the number of unemployed and the amount of non-employment existing at various times will be discussed.

When comparing the production of one period with that of another, an inherent difficulty confronts us. For instance, Census accounts of manufactures, so far as aggregates are concerned, are limited to values; and we say, for example, that in the United States the total value of products, including receipts from custom work and repairing, for the Census year 1880, was $5,369,579,191, and for 1890, $9,372,437,283. These figures represent the total value of products as returned by the producers themselves at the two censuses named. Precisely the same basis was used in 1870, 1860, and 1850; giving a series, therefore, of comparisons of total values of products.

The fallacies underlying these figures are well known to statisticians who have had to deal with the figures themselves in the constructive work of census-taking. They know and have known perfectly well that the total values stated, and which are used for comparison, consist of many duplications and reduplications all along the line of production; for the finished product of one producer, which is returned by him at its value at the works and becomes an integral part of the aggregate of values of all producers, is the raw material of some other manufacturer, and is by him accounted for again in the return of the total value of the products of his works. Now, this may occur several times in the returns of one establishment; that is, one, or maybe a dozen, of the raw-material elements of one unit of production may have been the finished products included in other returns. Hence the five billion and more in one census and the nine billion and more in another do not represent the actual added value to the original raw material entering into production.

Another source of difficulty arises from the fact, that the units of production at one census may have a value far less than the same units

of production at another. Pig iron which cost $10 a ton at one enumeration may at another have had a cost of $20 a ton; hence one million dollars' worth of pig iron in the one case would represent two million dollars' worth in the other. So, as prices are reduced from any cause,—through the introduction of better processes or otherwise,—the comparison of values for different periods does not represent truthfully the actual output in quantities.

So far, no method has been devised by which such comparisons as have been described can be made on the basis of quantity when the aggregate of all products is to be considered, nor has anyone yet been ingenious enough to suggest a comparison that shall be free from the viciousness resulting from the constant duplication and reduplication of the finished products of one producer that become the raw material of another. For twenty years or more, this matter has baffled the ingenuity of statisticians, and has constituted a favorite topic for the criticisms of those who have not had to deal directly with constructive statistics. As a matter of practical usage, therefore, census-takers and all who make comparisons of the productions of one period with those of another are obliged to use values; knowing well the imperfections of the comparisons, but knowing well, also, that, taking a series of years, the indications of growth or decline are quite clearly found in the use of values. It is easy enough to make comparisons in a single industry where the product can be reduced to units, like the production of iron-works, or of boot- and shoe-factories, or of cotton-mills; but the only way to compare different products is through aggregate values.

In making the study constituting the main topic of this paper it must be clearly understood that the comparisons are not scientifically exact and cannot be, and that they are made with full knowledge of their variable elements.

Another unfortunate element in this study presents itself in the fact that the Federal Census offers no means of comparing the general relation of production to productive capacity at any period, except in very meagre degree and for a very few industries. Resort must be had, therefore, to such local statistics as have been published; and these are to be found—so far as they can be found at all—in the statistics of the State of Massachusetts, with a few from Connecticut.

Fortunately for the study in hand, some valuable comparisons can be made for the years 1880, 1885, 1890, and 1896. In the Federal Census for 1880, the schedules used in collecting the products of industry required the following particulars: Average number of hands

employed, designating separately males above sixteen years of age, females above fifteen, and children and youths; regarding hours of labor, the number of hours in the ordinary day of labor from May to November, and from November to May; concerning wages, the average day's wage in each establishment for a skilled mechanic and for an ordinary laborer, and the total amount paid in wages during the year; the number of months each establishment was in operation, with detailed information as to the number of months run on full time, three-quarters time, two-thirds time, half time, and the number of months idle.

Most of the facts obtained in accordance with these inquiries were tabulated and published, and give a basis from which later comparisons can be made; but the particulars as to number of months each establishment was in operation, running on full or short time, etc., were not tabulated. The Massachusetts Bureau of Statistics of Labor, however, through an arrangement made with Gen. Walker, Superintendent of the Tenth Census, made copies of all manufacturing schedules returned for the Commonwealth of Massachusetts at that census, and the Bureau collated and published statistics for Massachusetts in more complete form than the Federal Census Office was able to do for the United States at large. In the Report of the Bureau for 1883, in the chapter entitled "Time and Wages," very full statistics as to running-time were reported for 2,440 manufacturing establishments. No establishment was included unless the wages paid by it during the Census year amounted to at least $5,000. These 2,440 establishments formed 67+ per cent of all the establishments in the Commonwealth paying that amount in wages during the Census year. Twenty-one industries were considered in the chapter named, and the 2,440 establishments represented 207,793 out of 289,810 persons employed in the Commonwealth in all establishments of the standard above-mentioned. Hence the basis for conclusions and deductions was ample. The industries represented, the average number of employees in each industry, and the actual average working-time for each establishment are shown in Table A.

The possible working-time for the 2,440 establishments included in Table A was 29,280 months. They ran on full time 26,882 months, on three-fourths time 635 months, on two-thirds time 137 months, and on half time 586 months; the entire working-time of the whole number of establishments being 28,240 months, while the idle time was 1,040 months. That is to say, in 1880, the actual working-time in the 2,440 establishments was 11.57 months, which, reduced to full time, is equivalent to 11.36 months; and this is 91.80 per cent of full

time. For 1,358 months, the establishments ran less than full time, or 4.64 per cent of full time; while during 1,040 months, or 3.56 per cent of full time, they were idle. The daily average for the year for the 2,440 establishments was 9.92 hours. In 480 establishments, the hours varied from 10; 413 working less than 10, and 67 more than 10 hours.

Table A.

Twenty-one Industries represented in 2,440 Establishments in the Commonwealth of Massachusetts.	Average Number of Employees	Actual Average Working-time in months and days for each establishment; short time being reduced to its equivalent in full time.	
		Months.	Days.
Boots and Shoes	37,657	10.60	271.18
Boxes	775	11.16	285.51
Brickmaking	1,135	7.75	198.27
Building	5,645	10.98	280.90
Carriages and Wagons	1,962	11.59	296.51
Clothing	11,435	11.49	293.95
Cotton Goods	59,684	11.95	305 72
Food Preparations	2,901	11.53	294.98
Furniture	3,133	11.54	295.23
Leather	6,703	11.76	300.86
Machines and Machinery	11,580	11.83	302.65
Metals and Metallic Goods	18,249	11.49	293.95
Musical Instruments	2,821	11.75	300.60
Paper	6,354	11.54	295.23
Printing and Publishing	5,227	11.74	300.35
Rubber and Elastic Goods	2,644	11.70	299.32
Stone	1,370	11.25	287.81
Tobacco	905	11.74	300.34
Wooden Goods	2,534	11.75	300.60
Woollen Goods	22,597	11.78	301.37
Worsted Goods	2,482	12.00	307.00
Totals and Averages	207,793	11.36	290.62

The actual working-time in months and days is clearly shown by industries in the foregoing table. Out of a possible 307 days for the working-year, it is seen that in brickmaking there was the least amount of running time,—198.27 days,—while in the manufacture of worsted goods the whole time was utilized. So, for the twenty-one industries, the actual average working-time can be ascertained.

From the same Report, it is found that, out of an aggregate of $631,135,284, for all the establishments in the Commonwealth, the value of the product for the 2,440 establishments was $361,181,439, or 57+ per cent. Assuming now, that the average number of days—290.62—

worked on full time by the 2,440 establishments represents the net actual time worked by all the establishments in the Commonwealth, —14,352,—it is apparent that the 352,255 persons employed in those establishments produced in 290.62 days $631,135,284 worth of goods, and that, if they had worked the entire year of 307 days, they would have turned out a product valued at $666,707,295. Making a calculation on this basis for the whole of the United States, we find that the 2,732,595 persons employed in 253,852 establishments—being the total number of persons employed and the total number of establishments engaged in manufacturing and mechanical industries in the United States in 1880—produced in 290.62 days goods having a total value of $5,369,579,191; further, that had all the establishments been run full time, or 307 days, the same number of persons would have produced goods to the total value of $5,672,220,723.

Evidently, therefore, the conditions of production in 1880 were quite satisfactory, and, as regards working-time,—which is all that can be considered, so far as the statistics of 1880 are of any value in the study,—the manufacturing and mechanical industries were in fairly full operation.

Comparisons for 1885 can be drawn from the Massachusetts Census Report for that year, which gives the yearly working-time for 23,431 establishments; the net actual time worked per establishment being 291 days. The total value of products in the Commonwealth in 1885, according to its Census for that year, was $674,634,269, and the average number of persons employed, 379,328. If these establishments had worked the full year of 307 days, the value of products turned out by the same number of employees would have been $711,727,617. As there was no census of the entire country in the year 1885, it is not possible to make a calculation for it on the basis of the Massachusetts statistics; but for 1890 such calculation can be made.

Since 1886, Massachusetts has had an annual report on the statistics of manufactures, so that similar calculations to those just exhibited can be made for the State for each year since that time. But, taking only the Federal Census year and the year 1896, we can arrive at some conclusions, based on working-time for the year 1890, which was a fairly good year for production, and for the year 1896, during which there was an industrial depression. The Annual Report of Statistics of Manufactures for Massachusetts for 1890 gives the yearly working-time for 3,041 establishments; the net actual working-time per establishment being 289.51 days. It will be remembered that for 1880 the

time was 290.62 days, and in 1885, 291 days; so that the actual working-time in 1890—289.51 days—did not vary much from the other two periods considered.

The total product of the Commonwealth of Massachusetts in 1890, according to the Federal Census for that year, was $888,160,403; and this was produced by 485,182 persons employed in 26,923 establishments, working, as stated, 289.51 days. Assuming that the average for the 3,041 establishments reported in the Massachusetts statistics would hold good for all the establishments in the Commonwealth, had the 26,923 establishments worked the entire time of 307 days in the year 1890, with the same number of employees, the total value of the product would have been $938,748,330 instead of $888,160,403, the actual value reported.

Applying the same process to the results for the entire country in 1890, it will be found that 4,712,622 persons in 355,415 establishments, working 289.51 days, produced goods to the value of $9,372,437,283, and that there would have been produced goods valued at $9,906,275,394 had the whole number of establishments been run the full year, or 307 days. Thus, for 1890, the conclusion must be reached that the margin of loss in the country on account of works running short time was exceedingly small, and has no particular bearing on the problem of the unemployed.

For 1896, dependence must be made solely upon the annual statistics of manufactures for Massachusetts. Turning to the Report for that year, it is found that 4,609 establishments were in operation, on the average, 279.43 days, and that the total value of products for these establishments was $537,720,294. In 1890, the total value of products for the Commonwealth of Massachusetts, according to the United States Census, was $888,160,403; showing that the value of products of 3,041 establishments, according to the Annual Report on the Statistics of Massachusetts for 1890, aggregating $545,890,702, constituted 61+ per cent of the entire product. If the product reported by the 4,609 establishments in 1896, returned at $537,720,294, is considered as representing 61+ per cent of the total product of the Commonwealth of Massachusetts in 1890, then the entire product, with the works running on full time, would have been $881,508,678. If it be assumed that this amount was produced in 279.43 days, there would have been produced in 1896 in 307 days an aggregate of $968,482,769, the number of establishments being estimated for that year at 40,805 and the average number of persons employed at 536,091.

For the whole country, the only thing that can be done for 1896 is to estimate the product, the number of persons employed, and the number of establishments, according to the figures supplied by the Federal Censuses of 1880 and 1890. On this basis, taking first the value of product, it is found that in 1880 the total reported was, as stated, $5,369,579,191, and that in 1890 it was $9,372,437,283. This shows an increase in ten years of $4,002,858,092, or an average annual increase of $400,285,809. Assuming that this average annual increase continued to 1896, then the total value of the manufactured products of the country in that year would have been $11,774,152,137; or, making due allowance for decreased production in 1896 as compared with 1890, a total production in 1896 for the whole United States of $11,500,000,000. Taking the average number of persons employed and the number of establishments, in the same way, we have in 1896, 5,900,000, persons employed and 416,000 establishments, based upon 4,712,622 persons employed in 1890 and 2,732,595 in 1880, with 355,415 establishments in 1890, and 253,852 in 1880. If, therefore, 416,000 establishments, employing 5,900,000 persons and working 279.43 days, produced in 1896 goods valued at $11,500,000,000, the same establishments, employing the same number of persons, would have produced in 307 days—the full working year—goods valued at $12,634,649,163.

In the Report on Manufactures for the Federal Census of 1890, there are some statistics relating to the average weeks employed during the Census year 1890, together with the average number of employees; and they are given in Table B on the following page. These statistics, fully sustain the calculations drawn from the Massachusetts Reports; and they are thoroughly corroborated also in the valuable report of Hon. Samuel M. Hotchkiss in the Fourth Annual Report of the Connecticut Bureau of Labor Statistics.

It will be observed that the conclusions given above are based upon yearly working-time only. The few facts which can be drawn from the Federal Census of 1890, as given in the table, clearly verify the working-time ascertained in the Annual Reports of Massachusetts and the decennial census of that Commonwealth. The average number of weeks employed in the few industries given by the Federal Census is about 48, which would give practically 288 days in the year. The statistics of Massachusetts for 1890, it will be remembered, gave 289.51 days.

In all probability, production is never carried to its greatest limit, even under normal conditions. The years 1889, 1890, 1891, and 1892

were practically normal years in production. The depression began about midway in 1893. However, few establishments are run through the entire year, owing to various causes; but, taking statistics from the Annual Reports of Massachusetts Manufactures, we are able to compare the average number of days during which establishments in various industries were in operation with the particulars already stated as to the working-time of employees.

Table B.

AVERAGE NUMBER OF EMPLOYEES AND AVERAGE WEEKS EMPLOYED DURING 1890.

(Totals for the United States.)

INDUSTRIES AND CLASSES OF EMPLOYEES.	MEN.		WOMEN.		CHILDREN.	
	Number.	Weeks Employed.	Number.	Weeks Employed.	Number.	Weeks Employed.
Carpet-mills:						
Operatives and skilled	11,269	49	10,702	49	1,789	49
Unskilled	350	49	43	48	17	50
Cotton Manufacture:						
Operatives and skilled	80,735	49	95,733	49	22,433	49
Unskilled	5,105	49	88	50	67	50
Chemicals and Allied Products:						
Operatives and skilled	18,573	48	1,897	51	91	48
Unskilled	14,271	48	997	50	199	50
Felt-mills:						
Operatives and skilled	1,286	48	346	48	123	47
Unskilled	70	49	.....	..	.....	..
Hosiery and Knit Goods:						
Operatives and skilled	10,882	45	15,040	46	2,664	45
Unskilled	799	46	85	48	47	47
Silk Manufacture:						
Operatives and skilled	10,594	49	19,695	48	2,573	49
Unskilled	884	49	212	48	93	49
Wool Hats:						
Operatives and skilled	1,415	44	490	44	139	46
Unskilled	144	44	33	42	11	42
Woollen-mills:						
Operatives and skilled	38,480	47	25,585	47	4,299	46
Unskilled	1,870	47	87	47	68	48
Worsted-mills:						
Operatives and skilled	16,862	48	17,543	48	3,747	49
Unskilled	1,100	49	184	50	44	50

The average number of days in operation for all industries in the Commonwealth of Massachusetts was, for 1889, 289.56; for 1890, 295.44; for 1891, 296.78; for 1892, 297.83; for 1893, 277.36; for 1894, 275.63; for 1895, 291.56; and for 1896, 279.43.

Turning now from the facts already shown for the average days actually worked, it is necessary to arrive at the true productive capacity of manufacturing establishments; and, in order to do this, it is essential to know what relation the actual production of such establishments bears to the maximum production of which they are capable without any increase in the plant,—that is, without any extension of buildings or additions to machinery, implements, and tools. To determine this relation, so far as possible, an inquiry was made in the Massachusetts Census of 1885, with fairly satisfactory results; and this feature has since formed a part of the Reports on the Annual Statistics of Manufactures for that Commmonwealth. The results of this inquiry at the State Census of 1885 and in the years 1890 and 1896 may be briefly summarized.

At the State Census for 1885, the proportion of business done was reported by 2,537 manufacturing establishments out of a total of 23,431, or 10.83 per cent,—a fairly representative proportion. The result arrived at was that these 2,537 establishments did business during the Census year amounting to 59.27 per cent of a maximum production of 100 per cent. As stated in the Report on that Census,

"It may savor of experimental statistics, to base any estimate upon this percentage, but it may not be out of place to state that if this percentage held good for the balance of the establishments, with a maximum of production in these establishments, the total product of the manufacturing and mechanical establishments of the State during the Census year should have reached $1,138,239,023 in value."

The actual production was $674,634,269.

Turning back to the results concerning yearly working-time for 1885, it is seen that 379,328 persons in 23,431 establishments, operated the full year, could have produced $711,727,617. To reach the maximum production mentioned, a larger force of employees would have been necessary; and this increased number of workmen can be determined by ascertaining the value of product per employee, based upon the total output for the 307 days, and dividing the maximum production by the average product per employee; that is to say, if 379,328 employees, working the full year, produced, or could produce, $711,727,617 worth of goods, each employee could have produced, on the average, $1,876 worth of goods. On this basis, the maximum production of which the establishments were capable, without any increase of plant whatever, was $1,138,239,023, requiring the labor of 606,737 persons.

The Report of Annual Statistics for Massachusetts for 1890 shows that for 3,041 establishments the proportion of business done in that year was represented by 72.65 per cent; and applying this percentage to the total value of products for the Commonwealth, according to the United States Census of 1890, there should have been a maximum production of $1,222,519,481, requiring the employment of 632,119 workmen, instead of 485,182 persons employed, on the average, 289.51 days, producing goods valued at $888,160,403.

Assuming that the proportion of business done by all the establishments in the United States in 1890 was the same as shown by the 3,041 establishments in Massachusetts, then the maximum production of the country in that year would have been $12,900,808,373, providing each establishment had been worked to its fullest capacity; and to produce this amount of goods there would have been needed 6,137,396 employees, instead of 4,712,622 persons working 289.51 days, on the average, and producing goods valued at $9,372,437,283.

The Report on the Annual Statistics of Manufactures for Massachusetts for 1896 shows that for 4,609 establishments the average proportion of business done in that year was represented by 58.98 per cent. As already stated, an estimated product of $881,508,678 was produced by 536,091 persons (estimated) employed 279.43 days in 40,805 establishments (estimated) in the whole State. If this estimated product were 58.98 per cent of the total productive capacity of the establishments, then the maximum production would have been $1,494,589,145, and the total number of persons needed, 827,568.

Applying the same percentage (58.98) to the estimated production of all the establishments of the United States in 1896, working the same time (279.43 days), that is, $11,500,000,000 worth of goods by 5,900,000 persons, as already shown, there would have been a grand aggregate of production in that year (1896) of nearly $19,500,000,000 as representing the greatest possible production of which the manufacturing establishments of the country were capable without increased facilities; and this production would have required the services of at least 9,100,000 persons.

The above statements relative to the proportion of business done to total capacity of production are for general conditions; but, in order to arrive at a true understanding of the status in different lines of production, I have compiled the following particulars of the running-time in the principal industries of the Commonwealth of Massachusetts:—

INDUSTRIES.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.
Agricultural implements...	274.86	293.25	285.21	292.72	280.05	248.59	281.46	277.27
Arms and ammunition.....	296.00	300.38	299.31	291.10	283.40	284.20	289.29	293.81
Artisans' tools.....	300.92	294.10	297.11	295.98	274.25	237.70	282.91	282.68
Boots and shoes.....	285.88	288.72	289.15	293.56	275.99	279.16	284.64	282.30
Bricks, tiles, and sewer pipe	209.32	227.77	234.07	238.23	228.90	214.92	212.80	227.26
Carpetings	285.17	297.23	301.76	303.33	247.53	259.15	299.63	241.14
Carriages and wagons.....	295.78	298.17	295.41	298.03	286.96	289.93	288.90	278.03
Chemical prep'ns, comp'd..	304.88	302.39	289.62	302.21	293.78	296.53	300.43	294.11
Clocks and watches.....	296.86	287.93	282.12	286.46	261.38	264.07	277.59	261.38
Clothing	289.17	296.95	296.12	296.97	280.04	278.95	290.25	278.13
Cooking, lighting, and heating apparatus.....	274.11	274.39	277.99	281.07	267.03	250.67	258.66	261.78
Cordage and twine.....	291.56	287.83	295.35	295.19	293.27	287.45	286.40	281.48
Cotton goods.....	296.25	299.05	304.16	304.85	281.87	273.08	297.36	279.53
Cotton, woollen, etc. textiles	294.00	301.88	312.40	304.61	255.93	303.49	301.48	286.98
Earthen, plaster, stone ware	283.75	295.57	272.07	288.63	277.30	290.52	297.56	268.21
Electrical apparatus, etc...	304.60	302.24	305.25	305.74	266.33	304.98	300.12	298.78
Electroplating	290.38	280.35	295.36	290.57	280.30	277.99	283.58	288.32
Fancy articles, etc.....	282.17	294.43	299.53	292.24	280.23	277.26	290.22	282.62
Fertilizers	304.00	271.26	257.66	305.09	269.25	294.87	305.02	306.86
Fine arts and taxidermy...	286.67	306.00	273.56	303.50	305.50	306.00	307.40	303.27
Flax, hemp, jute, linen goods	300.20	302.10	301.35	298.80	279.15	245.14	290.06	267.21
Food preparations.....	297.09	295.56	302.05	304.42	299.19	300.88	298.47	297.42
Furniture.....	290.70	298.34	298.97	297.67	286.56	281.43	291.97	288.17
Glass	279.63	278.94	287.30	294.11	299.45	291.08	290.06	261.17
Glue, isinglass, and starch.	250.60	275.03	232.61	234.06	249.83	233.73	259.30	241.31
Hose: rubber, linen, etc...	272.50	286.08	299.69	295.21	274.42	298.63	305.44	306.89
Hosiery and knit goods....	277.03	297.53	300.53	299.38	282.80	291.83	298.15	287.78
Leather.....	288.19	294.08	286.59	294.12	280.09	291.59	294.73	286.13
Liquors, etc. (not spirituous)	305.67	295.93	304.95	303.25	302.10	305.69	301.67	299.05
Liquors: malt, distilled, and fermented.....	284.00	297.17	300.84	301.83	303.10	302.73	290.63	289.65
Lumber	283.75	290.31	274.40	300.60	254.35	260.18	246.67	272.43
Machines and machinery..	299.09	304.22	297.40	303.51	287.42	283.30	297.55	292.16
Metals and metallic goods..	290.33	296.99	294.87	292.02	267.91	266.91	284.14	278.79
Mixed textiles.....	295.67	293.15	290.83	298.85	285.56	251.82	293.35	258.01
Musical insts. and materials	295.16	296.43	299.54	298.19	267.50	273.57	289.25	272.24
Oils and illuminating fluids	296.56	306.28	306.11	306.17	306.42	304.85	303.83	304.10
Paints, colors, crude chem'ls	277.81	295.69	297.09	295.77	280.17	285.98	276.12	264.17
Paper and paper goods.....	293.15	296.91	300.02	289.99	278.37	273.21	287.34	272.56
Printing, pub'g, bookb'd'g.	300.00	301.40	303.60	305.14	303.19	303.23	286.47	296.58
Print-works, dye-works, and bleacheries.....	290.05	296.93	295.01	300.13	267.51	270.68	298.82	282.44
Railroad construction and equipment	301.00	303.06	251.68	300.63	294.91	259.08	287.93	288.52
Rubber and elastic goods..	295.29	282.76	283.02	281.15	286.08	276.12	283.89	266.73
Saddlery and harness.....	.....	.....	.....	303.55	296.08	296.14	290.08	286.60
Scientific instruments, etc.	294.71	301.74	302.73	301.22	289.44	290.27	296.55	300.73
Shipbuilding	286.95	297.54	296 56	295 98	291.08	286.63	276.89	285.05
Silk and silk goods.....	302.20	298.93	296.26	300.71	262.15	265.60	296.65	259.33
Stone	289.64	288.64	287.57	274.26	282.11	279.25	281.65	280.99
Straw and palm-leaf goods.	252.12	267.51	245.17	267.27	267.58	257.61	273.97	272.37
Tobacco, snuff, and cigars.	288.56	294.42	296.01	297.41	290 75	287.91	293.47	290.02
Wooden goods.....	291.69	292.17	292.05	295.12	281.69	269.96	287.58	285.22
Woollen goods.....	286.00	293.48	298.42	299.29	265.01	262.70	292.19	259.65
Worsted goods	296.20	305.11	305.13	303.61	278.53	270.90	305.64	279.35
All industries.....	289.56	295.44	296.78	297.83	278.40	275.63	291.56	279.43

In the foregoing table, the figures for "All industries" include twenty-four industries not shown in detail, owing to want of space.

The Federal statistics do not give production in relation to the actual capacity to produce; but in the special reports upon iron and steel, made by Hon. James M. Swank in 1880 and by Dr. Sweet in 1890, we are able to ascertain the following facts concerning the production of iron and steel of all kinds for the two years named:—

IRON AND STEEL. YEARLY CAPACITY AND ACTUAL PRODUCTION.

ITEMS.	1880.	1890.
Total daily capacity in tons	47,160	114,936
Number of working-days	310	310
Total yearly capacity in tons	14,619,600	35,630,160
Actual yearly production in tons	7,265,140	18,216,215
Average number of employees	140,798	171,181
Average number of employees required if running full capacity	283,326	334,870

The calculations already made depend upon bases which cannot be doubted; but they relate entirely to working-time and to proportion of business done, as shown by the reports of producers themselves. Before any conclusions can be drawn as to the points where production is carried too far, or as to the bearing which the facts already given may have upon the question of non-employment and consumption, all the available facts relative to the number of unemployed at various times should be considered. This consideration, however, must be left for another article.

CARROLL D. WRIGHT.

THE MONETARY COMMISSION.

CALM and yet friendly critics of democratic institutions, like Mr. Lecky in his "Democracy and Liberty," have pointed out the existence of unmistakable dangers which have appeared in the process of our political development. To these dangers we are not blind; but while as a people we always regard them as serious, yet to American optimism they seem sporadic and not chronic. We have fallen into the habit of admitting that American life and ideals are not truly expressed in our political activity, or in our legislation; that intentions and results are badly mated. The superiority of our ideals over our political action—if that be granted—seems to be due to a neglect of political duties. The preoccupation of an intensely industrial community, engaged in exploiting the amazing resources of a new country, has left us temporarily neglectful of our civic obligations.

From this point of view, it is reasonable to suppose that political indifferentism—sometimes too long continued, as in the case of prolonged endurance of bad monetary legislation—is to be ascribed to an absorption of mind in other directions. Moreover, although the losses and damage wrought by erroneous politics are extraordinary, yet the return of wealth for skilled human effort is so great, and our phenomenal resources yield such enormous totals, that the losses are accepted and forgotten. This may not indicate a discriminating and frugal mind; but it is the way of doing things natural to an immature people in the midst of rapidly accumulating riches.

To some minds, the stolid acquiescence for decades in vicious legislation—so long endured that its viciousness has become notorious—seems to be an exhibition of American indifference so discouraging that we should frankly, although reluctantly, admit the "degradation of American politics" as an inevitable consequence of democratic institutions. There seems indeed to be a basis for such reflections. That a monetary system like that of the United States should not merely have found a place in our legislation, but should also have remained in force for more than a generation, when qualified observers at home and abroad have repeatedly foretold disaster; that losses of untold millions should

have been suffered in commercial ruin directly traceable to defective monetary enactments, when the application of plain business principles would have made this damage impossible; that our country should be painfully writhing in distress and weighed down by industrial depression at the very time when foreign countries are recording the largest exports and imports and the greatest prosperity in all their history,—all this seems inexplicable and astounding. Is it any wonder that, by many thoughtful people, this long continuance in a blundering and costly policy by an ambitious country should be regarded as proof of a deep-seated incapacity on the part of a democracy to successfully meet its problems,—to appreciate, for instance, the gravity and complexity of problems such as must arise in establishing a sound fiscal and monetary policy, and then rise to a fit solution of them.

There are some of us, however, who might take a more cheerful view. In spite of some inexplicable aberrations from sound judgment, and of some strange hallucinations for a brief time, no estimate of the American electorate is correct which fails to recognize its fundamental good sense, honor, and intelligence. A sympathetic, and therefore a truer, insight will lead one to notice symptoms indicative of very sane and healthy action, but which are often overlooked in the hasty bustle of obtaining immediate political results. The reserve force of right action in the American people, which can be called upon in any great emergency, must always be reckoned with by statesmen. The great democratic giant moves on his busy way, absorbed in developing the crude resources of a new land, settling the pressing needs of a new, but ambitious, community, striding on magnificently to material wealth, self-centred and often serenely unconscious of ugly signs of disease, which, as yet, have made little or no impression on his inner strength and vitality. An unexpected tumble, a surprising blow, now and then, seem to have no perceptible influence in retarding his ultimate and confident progress. But when, by recurring twinges, this big personality is once made fully conscious that something is permanently injurious to his health—when, for instance, he discovers that his monetary diet gives him an excruciating colic, increasing in intensity—we are likely to witness the direction of great energy toward the discovery of a cure. And, if I am not greatly mistaken, that is what we are observing in the present movement for the reform of our monetary legislation.

There are unmistakable evidences that the industrial interests, quite irrespective of party affiliations, are exhibiting a change of emphasis; withdrawing their attention, for a time, from the engrossing tasks of

production and manufacture in order to examine into and remedy the dangerous consequences of a vicious monetary policy. This is a decidedly healthy and encouraging sign. Our great democracy, feeling a pronounced lassitude in its system, racked in every part of its body by suffering and distress, stops in its onward strides in the path of prosperity, and reluctantly admits that it can take up its work again only after its disease has been diagnosed and proper remedies applied. Those of us who despair too easily of the Republic must, therefore, be patient, and allow time enough for large forces to complete the cycle of examination and reform. A return to sane methods may be slow, but it is inevitable, if we continue to remain a commercial nation.

Foreigners are often pleased to speak condescendingly of American optimism,—a confidence that, in spite of corruption and malodorous administration, everything will eventually work out a good result. After all, is this so-called optimism anything more than a surer knowledge on the part of those who know our democracy most truly? If it be a fact that, as I have already observed, there is a great reserve force of good sense, honorable purpose, and shrewd intelligence among our people, which in supreme crises, or after long irritation, is sure to rise spontaneously to set the nation aright, then we, who have faith in our country, are not basing our hopes on imagination or sentiment. Even though the moral force of the community sometimes slumbers until impatient persons announce its extinction, it is still there, to be awakened when there is less preoccupation with the eager pursuits of industry. It is the peculiarity of our democracy,—hardly a vice, unless a habit of procrastination may be called a vice,—that time and effort are needed to awaken its consciousness to a proper understanding of an evil, and to connect an aroused moral sense with definite legislation.

It is to be observed, moreover, that a passing craze should not be mistaken for an awakening of the public consciousness. A temporary flirtation with an issue, tricked out in false braws to counterfeit beauty, is not the same as the deep affection which guides permanent action. The public may flirt with this or that dangerous issue for a time; but a permanent alliance is out of the question. In our land, an impression upon the inner consciousness by a grave matter is slow and difficult. Geographical separation and diverse climates within our own boundaries make practically separate communities, with different feelings and standards, and with diverse points of view. Hence, even when those who have a common purpose to attain are many in numbers, it is difficult to find each other out and to act in concert. This explains why

it is that the creation of a common understanding is a slow process, often obtained only through panics and suffering, and that leadership and organization to carry this understanding into positive legislation are of first importance. The mere fact that an ill has been long endured is not in itself discouraging; for when the existence of an evil has once been generally recognized, the end is not far, if a leader appear.

Whatever the immediate causes, it will be admitted by all that the public consciousness has been thoroughly awakened to the evils of our present monetary system—or rather lack of system. The sufferings of the industrial organism have been acute and unprecedented: the consciousness of disease is everywhere felt. If this be granted, the end is not far off. The questions now universally asked are: "What is wrong? What are the remedies?" This in its briefest form is the *raison d'être* of the Monetary Commission. It is now sitting to diagnose impartially the disease, and to prescribe the remedy. It is the outcome of a movement which reflects the healthiest operations of democracy that have been observed in recent years. It is from the people, by the people, and for the people. Above all party, above all sectional feeling, it is in the interests of the whole country, and not in the interest of any one man, nor of any particular region. Larger than any one industry or vocation, it is the outcome of all industrial life throughout the length and breadth of the land, and stands for the dignity of labor and production when these demand the right to be freed from artificial barriers to profitable and steady employment. It is evidence of the healthy condition of popular government. Stultifying acquiescence much longer in a fatuous monetary policy might properly have been regarded as proof of the degeneration of our institutions, and of the flabbiness of the public conscience. The extent of this movement among the business interests, its spontaneous origin, its non-partisan character, are exceedingly hopeful. Although long delayed, it is so steady, so direct, so uncompromising, that it becomes a wholly novel and unprecedented part of recent political activity. Never before in our history have the business interests of the country combined to secure the formulation of a sound monetary system, with the evident purpose to follow the announcement of that result by a formidable campaign in every district and precinct of the nation. It is a strong demand based on the dignity and self-respect of our industrial life.

On November 18, 1896, the Governors of the Indianapolis Board

of Trade invited the Boards of Trade of Chicago, St. Louis, Cincinnati, Louisville, Cleveland, Columbus, Toledo, Kansas City, Detroit, Milwaukee, St. Paul, Des Moines, Minneapolis, Grand Rapids, Peoria, and Omaha to a conference on the first of December following, to consider the advisability of calling a larger convention from commercial organizations throughout the country for the purpose of discussing the wisdom of selecting a non-partisan commission to formulate a sound currency system. This preliminary conference, after long deliberation, issued a call for a non-partisan monetary convention of business men, chosen from boards of trade, chambers of commerce, and commercial clubs, to meet in Indianapolis, on January 12, 1897. In the call, attention was drawn to the fact that a necessity for such legislation as would establish our currency upon a sound and permanent basis was generally conceded by business men. In view of what I have said, it is noteworthy that the call contained these significant words:—

"The business men have been accused of neglect of political duties. In ordinary times there may be some foundation for this charge; but at every critical juncture in the history of our country, when the nation's prosperity, honor, or general welfare was seriously in danger, they have, in the spirit of enlightened patriotism, risen to the full measure of their duty; and we believe that the painful experience of the country under the existing laws on the subject of the currency admonishes the business men that we have reached a point where it is their duty to take an active part in helping to solve the great questions involved."

Here is the evidence that the public consciousness had been awakened.

At the convention, held January 12, 1897, there assembled, with credentials, two hundred and ninety-nine delegates,—men of high character and distinction,—representing business organizations and cities in nearly every State in the Union. Indeed seldom has a more influential body of men of experience and ability been brought together. The result of its deliberations was expressed in resolutions conveying the idea that no progress could be made until a definite plan of monetary reform should have been agreed upon, to which public attention could be directed. The resolutions, which received enthusiastic adoption, began as follows:—

"This convention declares that it has become absolutely necessary that a consistent, straightforward, and deliberately planned monetary system shall be inaugurated, the fundamental basis of which should be: First, that the present gold standard should be maintained. Second, that steps should be taken to insure the ultimate retirement of all classes of United States notes by a gradual and steady process, and so as to avoid injurious contraction of the currency, or dis-

turbance of the business interests of the country, and that until such retirements provision should be made for a separation of the revenue and note-issue departments of the Treasury. Third, that a banking system be provided, which should furnish credit facilities to every portion of the country and a safe and elastic circulation, and especially with a view of securing such a distribution of the loanable capital of the country as will tend to equalize the rates of interest in all parts thereof."

Recognizing the absolute necessity of committing the formulation of such a plan dealing with complicated currency questions to a body of men trained and experienced in these matters, a commission was proposed. In case no commission should be authorized by Congress in the spring of 1897, the Executive Committee of the Convention was authorized to select a commission of eleven members,

"to make thorough investigation of the monetary affairs and needs of this country, in all relations and aspects, and to make appropriate suggestions as to any evils found to exist, and the remedies therefor."

When the labors of the Commission shall have been completed, it shall make

"report of its doings and suggestions in such manner and form as it shall deem best adapted to present the same to this Convention and its members for action, and, if legislation is deemed advisable, shall accompany such report with a draft of such bill or bills providing for such legislation."

Congress did not authorize the appointment of a monetary commission; and the Executive Committee of the Convention selected a commission of eleven members,[1] which began its sittings in Washington, September 22, 1897.

The reason why the movement for currency reform has crystallized in the appointment of a monetary commission is solely because of the impelling force of public opinion. The monetary panic of 1893 and the disasters of 1896 will not have been suffered in vain, if, out of the stress and strain of the last four years, shall have come a deep-seated conviction that indifference to great evils is no longer possible. The whole purpose of a commission is that it may present definite recom-

[1] George F. Edmunds, Vermont, chairman; George E. Leighton, Missouri, vice-chairman; T. G. Bush, Alabama; W. B. Dean, Minnesota; Charles S. Fairchild, New York; Stuyvesant Fish, New York; J. W. Fries, North Carolina; Louis A. Garnett, California; J. Laurence Laughlin, Illinois; C. Stuart Patterson, Pennsylvania; Robert S. Taylor, Indiana; and L. Carroll Root and H. Parker Willis, secretaries.

mendations for which public opinion may be created. Is it not well to protest against the indiscriminate criticism of Congress on the ground that it has as yet taken no action toward currency reform? Certainly it is far better to put the responsibility where it really lies,—with the absence of the definite conviction as to specific measures on the part of the general public. Indeed, some persons question whether Congress should ever legislate except in answer to a clearly expressed mandate from the people. At any rate, it is puerile to waste time gossiping as to who is to blame for the existing evils in our currency system. If any one body is more to blame than another, it is the general public. In fact, we have to-day about us as good—or bad—a monetary system as we deserve, considering the little intelligence that has been given to it. The really important matter is the general belief that present conditions contain potential disaster, and that they must be changed for the better. If our currency is in such a state of unstable equilibrium that any future alarm, such as the one which came in the summer of 1896, may produce a paralysis of trade and industry, then it is bad business policy to leave our currency as it is now.

The striking thing in looking back over thirty-five years is, that we have never observed any steady, continuous policy in regard to our currency. During all that time, industry has been handicapped by the uncertainty of a depreciated, or a doubtful, standard of prices and payments. The whole importance, therefore, of the spontaneous uprising of business interests in the Convention of January 12, 1897, resides in the creation of a commission, instructed to formulate a consistent monetary policy, which may be laid before the public with a view to its guidance and instruction. A struggle may then be inaugurated to incorporate into legislation, as rapidly as may be, one part after another of this general plan. In short, the Commission has it in its power to set up a pillar of cloud by day and a pillar of fire by night, to guide the followers of sound monetary principles through all the marches and campaigns of coming years, until they shall reach the promised land where freedom from monetary disturbances shall be ever secured. Granting that all the conclusions of such a commission may not at once be enacted into law; yet the very existence of such a body of recommendations will in itself be a fact which must be reckoned with. It is high time that some monetary Sheridans should appear far in front of the hesitating armies, to order the battle-standards to be planted well forward, and courageously to form the troops upon the new and advanced line.

It should be especially noted that the whole movement, of which

the Commission is the outcome, is essentially democratic. Members of chambers of commerce and of other commercial bodies, representing all parts of the country, have assembled for consultation, and for the formulation of remedies for existing dangers to industry. They have gathered together and appointed their representatives to act for them in regard to currency legislation in the same manner as would any convention of merchants seeking redress from injurious bankruptcy laws. The Commission is merely the agent of the great business constituency. The Commission and the body from which it sprang are parts of but one movement. If it is impertinent for the Commission to deliberate upon currency matters, then it is equally impertinent for the business interests to give attention to them.

It is hardly necessary to point out that the practical men of our land are acting wholly in the letter and spirit of the First Amendment to the Constitution, which preserves "the right of the people peaceably to assemble, and to petition the Government for a redress of grievances." The right of petition has been effective on many important occasions. In England, petitions brought about the abolition of slavery, the emancipation of the Roman Catholics, and the repeal of the corn laws. Petitions which prayerfully present the conclusions of the Monetary Commission will not offer the opinions of a self-constituted body of eleven men, but those of the duly accredited representatives of the commercial, manufacturing, banking, and agricultural interests in different parts of the United States. It is not impossible that a "Merchants' Petition" in the New World may give another date to the records of progress in commercial history.

The merchants of our country, moreover, in this movement which has culminated in the creation of a commission, have taken a position that indicates the appearance of a new dignity and self-respect. It is a commonplace of democratic government to insist that all forms of labor—each and all the industrial occupations—should be regarded as equally honorable, and that there are no privileged classes. The day, when no "tradesman" can be presented at the official receptions of our Government, will never dawn for an American. All this may be true, and more. It is not as generally recognized as it might be, that the great preponderance of the brains and genius of our people is to be found in the industrial occupations of our land. The men who officer the great industrial machinery of production and trade are constantly putting forth an effort of mind, a creative force, an originating power, such as seldom appear in other professions. In fact, the ablest and most

competent men are, by the operation of our social development, drawn into the service of business. Had the scholars of to-day the driving energy and intellectual quality of their industrial brothers, scholarship would advance, by leaps and bounds, far faster than it does now. Nothing in our American life is more marked than the prodigious display of virile and penetrating intelligence in all the departments of business activity. Only too often are men obliged to seek the so-called learned professions because they cannot possibly achieve success in commercial life in face of the intense competition of strong men.

And yet it is not uncommon to hear depreciative remarks about "mere business men." Indeed, by some strange survival of traditions, there has been impalpably conveyed to the public judgment a bias, more or less pronounced, which has placed the business man in a doubtful rank of influence. Strangest of all, in a democracy like ours, the man of affairs has felt constrained at times to assume an apologetic attitude toward his fellows. In view of his powers and his daily services to society, this seems quite inexplicable. In illustration of this attitude, reference may be briefly made to the profession of banking. I am fully aware that what I may say in this connection may be misquoted and misconstrued, and regarded as showing a weak subserviency to wealth. The question, however, is "What is the truth?" not "What will men say?" And it is high time that someone should have the courage to tell the truth about bankers and banking.

The widely diffused prejudice against bankers comes from persons who know nothing whatever about the business of banking, or that bankers gain a profit only from their discounts by buying and selling something in no other way than another man who may have invested his capital in dry-goods. The banker does a service which others require. No one is obliged to accept a loan. The service is rendered by voluntary action on both sides. In no sense does a banker earn his profit in any way different from a cab-driver, or an expressman: the one invests his capital in the work of supplying society with the machinery of exchanging and transferring goods, the other invests his capital in a machine for the transfer of persons or goods from one spot to another. It is as ignorant and childish to say that all bankers are bad as to say that all cabmen are good. Bankers are every day rendering a service to society without which industry could not possibly go on: they make exchanges of goods possible in a marvelously skilful manner, and increase the power of production and the efficiency of labor in ways little understood.

The relation of the banker to his clients is generally a closer and more confidential one than that of the clergyman to his parishioners. Every man in business, sooner or later, needs assistance at critical moments. Not to get it means failure, bankruptcy, and poverty for his family. Perhaps no man in the community, therefore, is the recipient of more sacred confidences, more inside knowledge of his client's struggles and hopes, than the banker. And every day we are entrusting our savings and investments to his honor and probity. Think for a moment of the service to society performed by a banker who vigilantly keeps intact for our daily use the millions upon millions of dollars of deposits! If he were ever distrusted for one hour, imagine the chaos that would supervene, and picture the loss to innocent people who are obliged to rely on skilled advice for investment! Is it not then a piece of cowardly and unmanly wrong on the part of some of our people to describe these men as "harpies" and "plunderers of the poor"? The sense of fair play should require retraction of such untruth; for untruth it is. It is set afloat by persons who have absolutely no knowledge of what they are talking about; it is tossed about by those whose stock in trade is to excite antagonism between the rich and the poor. So far has it gone, that the banker is practically excluded from public life. The demagogues and charlatans have actually led bankers to assume an attitude which admits that they have no influence.

If, therefore, this rising of the business men of the whole country means anything, it means an increasing sense of self-respect and dignity. They have as much right to unite in a movement for the protection of trade and industry from ignorant or dishonorable assault as to arrange for immunity from burglary or sandbagging. The right-minded man of affairs has the same inalienable privilege of demanding justice and freedom for his work, as the religious man has to demand protection and freedom in the exercise of his conscientious scruples. But, so long had the business interests been accustomed to bad monetary legislation that the apologetic attitude of mind was not easily thrown off: they, at first, hesitated to demand all that was rightfully theirs. Now, however, the spirit is different. It begins to assume with busy men the character of a holy war for justice and for their rights. They refuse any longer to permit matters of vital interest to employers and employed—to industry as a whole—to be tossed about the political field in the game of politics.

J. LAURENCE LAUGHLIN.

OUR PROPOSED NEW SUGAR INDUSTRY.

DURING the past quarter of a century, the attention of the public has been frequently called to the fact that we were annually expending enormous sums for the importation of foreign sugar, amounting in recent years to some eighty million dollars; and it has been stated that, by producing our own supply from beets, this money might be saved.

Attempts have been made at different times to establish beet-sugar factories; but it is only within the last few years that the industry has been conducted with any degree of financial success, although it has been protected either by heavy duties or by national or State bounties.

Last year, the half-dozen factories in this country produced in all some 40,000 tons; while the amount consumed by us was nearly 2,000,000 tons. During the Tariff discussion preceding the passage of the Dingley Bill, the advocates of the beet-sugar industry developed surprising strength. The whole Tariff Bill was delayed, and its passage jeopardized for a time, by the discussion between the Senate and the House as to whether the duty upon refined sugars should be fixed at twenty cents or twelve and one-half cents per one hundred pounds, *i. e.*, one-fifth of a cent or one-eighth of a cent per pound. While the newspapers of the country were directing attention to this duty upon refined sugar, the advocates of the beet-sugar industry succeeded in placing a duty of $1.68 ½ per one hundred pounds upon raw centrifugal sugars of 96 test,—sugars comprising the bulk of our importations. This rate was equal to 80 per cent *ad valorem* upon prices then ruling abroad. There was placed, moreover, in addition, a countervailing duty to offset the bounties paid by European beet-sugar countries, which made the duty upon German beets—our largest source of supply of that grade—about 95 per cent upon the export price. Again an attempt was made to secure a national bounty for beet-sugar. And, finally, a movement was set on foot to cancel our treaty with Hawaii, under which treaty the sugars produced there have, for some twenty years, been admitted to this country free of duty.

Owing to delay in the passage of the Tariff Act, heavy importations of sugar were made during the first half of the present year,—a

circumstance that will materially affect the revenue to be derived from this article during the first twelvemonth of the new rates. After these excessive stocks are used up, however, the revenue to be derived therefrom—if last year's importation of 1,450,000 tons of dutiable sugar be taken as the basis—will reach $50,000,000. Thus the tax which the consumers are obliged to pay, if based upon the total consumption of 1896—1,960,000 tons—will amount to $67,620,000. The difference between the figures given as estimated revenue and as estimated tax represents the domestic production of cane- and beet-sugars for 1896, amounting together to 315,000 tons, plus the 200,000 tons (more or less) imported free from the Sandwich Islands, all which would find a market at the duty-paid price of imported sugars.[1]

The placing of a high rate of duty upon raw sugars found few opponents in Congress. First, the highest possible rates were sought by those favoring the domestic production of beets; and next, a high rate was advocated by those looking upon sugar duty as a revenue measure. But if the claims of those favoring the production of beets prove true, —if, within a few years, this country should supply its own demands for sugar,—what would become of the $50,000,000 revenue? How could it be made up? And how could the consumers be relieved of the heavy tax until that time should arrive when there would be an excess of domestic production over requirements, and prices would fall through oversupply?

In the various European countries, the governments, many years ago, took the beet industry into their special care. When the limit of home demand had been reached, bounties were paid upon exports of sugar. These bounties, from time to time, were increased, in the vain attempt to sustain the price to producers at a paying point. As a result, the production of sugar has been artificially stimulated to such an extent that the crops of Germany, Austria, France, Russia, Belgium, and the Netherlands combined now exceed their consumption by some 2,300,000 tons. This artificial stimulation has thrown a heavy burden upon these governments in the way of bounties, and has led them to supply England, and in part the United States, with sugars at less than

[1] In the above estimate, the additional revenue to be derived from the countervailing duty against European beet-sugars is not taken into account, as the probable effect of the duty will be to turn these sugars over to England, where all sugars are admitted free. Their place will most likely be filled by cane-sugars from Java and other countries,—now going to England,—as these sugars are admitted here, upon the same basis of test, at one-quarter of a cent per pound less than the German sugars.

cost. All attempts to maintain prices at a remunerative figure by endeavoring to sustain the home markets, while shipping to other countries below cost, have failed. The consequence is that the world's markets are overstocked, and that sugars are selling in all the large producing countries at less than their average cost of production; only the best equipped and best located factories being able to make any profit.

At the time of writing (August, 1897), German raw beet-sugars, 88 analysis, are selling for export at 8s 6d per 112 lbs., or 1.82 cents per lb.

The following table shows the world's production of sugar for the year 1896–1897:—

SUGAR CROP OF THE WORLD 1896–1897, IN TONS.

Cane-Sugar.			
West Indian Islands, South America	1,139,000		
United States	275,000		
Total America		1,414,000	
Asia		782,000	
Australia, etc		140,000	
Sandwich Islands		200,000	
Egypt, Mauritius, etc		290,000	
Spain		20,000	
			2,846,000
Beet-Sugar.			
Germany	1,845,000		
Austria	950,000		
France	750,000		
Russia	735,000		
Belgium	295,000		
Holland	175,000		
Other European Countries	201,000		
		4,951,000	
United States		40,000	
			4,991,000
Total World's Production, gross tons			7,837,000
Increase over past year in tons			582,760

It is a notable fact that, although Cuba's crop fell short some 800,000 tons, owing to the insurrection, there was an increase in the world's

total production, to the extent of 582,760 tons,—due to increased production in Europe.

The world's consumption is as follows:

COUNTRY.	Year Ending	Tons.
United States	Jan. 1, 1897	1,960,000
Canada and Provinces	.....	140,000
Great Britain	Mch. 31, 1897	1,494,000
Germany	" 31, 1897	594,000
Austria	" 31, 1897	343,000
Holland and Belgium	" 31, 1897	391,000
France	" 31, 1897	555,000
Russia		500,000
Other Countries of Europe (estimated)		513,000
		6,490,000
Unaccounted for		1,347,000
Total production (as shown in preceding table)		7,837,000

Of the 1,347,000 tons unaccounted for, much was taken by countries from which no statistics are obtainable. A large part, however,—254,300 tons,—found no market, and was, therefore, added to the stock which, on August 1, was estimated in tons as follows:—

WORLD'S STOCK OF SUGAR, AUGUST 1, 1897.

United Kingdom	82,800		
United States (Raws)	560,000		
Cuba	11,000		
European Countries	1,141,000		
		1,794,800	
Add excess of refined sugars U. S., estimated upon increased melting of raw sugar since Jan. 1, 1897		87,000	
Total World's Stock of Sugar, Aug. 1, 1897			1,881,800
Stock at corresponding date, 1896			1,627,500
Increase of World's Stock			254,300

The world's stock of sugar, therefore, which on August 1, 1894, was 1,087,766 tons, had increased, by August 1, 1897, to 1,881,800 tons.

In the face of such oversupply and of ruinous prices, the United States—the largest consuming country in the world—proposes to establish the new industry and to produce its own sugar. With the experience of European countries in artificially fostering an industry to a point beyond the natural law of supply and demand, is it wise for us to

enter upon a similar policy? With the present duty, ranging from 80 to 100 per cent, imposed for the purpose of protecting an industry that does not as yet, to any extent, exist, and with the experience of our past sugar legislation,—duties having been changed with nearly every incoming Administration, and varying between two and a quarter cents per pound on centrifugals to free raw sugars,—will capital be attracted to the new industry?

The imports of foreign sugars are often referred to as representing so much loss to a country that should supply itself. That these sugars, however, are by no means paid for in cash, is shown by the following figures for the principal countries supplying the United States with sugar and molasses for the year ending June 30, 1896, together with our exports to those countries:—

COUNTRIES.	Imports of Sugar from.	Exports of Merchandise to.
Austria	$ 931,263	$2,439,651
Belgium	1,771,977	27,070,625
Germany	12,528,755	97,897,197
Holland	1,182,605	39,022,899
Dutch East Indies	11,388,487	1,576,316
" Guiana	289,243	622,761
British West Indies	4,758,569	8,734,153
" Guiana	3,414,368	1,749,193
Santo Domingo	2,459,302	1,064,116
Spain		11,492,428
Cuba	24,215,935	7,530,880
Puerto Rico	2,227,593	2,102,094
Philippine Islands	2,270,902	162,446
Brazil	3,776,486	14,258,187
Hawaiian Islands	11,338,698	3,985,707
Totals	$82,554,183	$219,708,653

In the above table, the exports to Spain are based largely upon the imports from Cuba. The mother-country sends us no sugar direct. Although at present, by reason of the insurrection, our exports to Cuba are very light, it is worthy of note that during the year ending June 30, 1893,—*i. e.*, previous to the cancellation of our Reciprocity Treaty with Spain, when raw sugars were admitted free,—the island took from us $24,157,000 worth of merchandise.

These figures show that our exports to those countries from which we are buying sugar reach the enormous sum of $219,708,653; and an analysis would prove the larger part of these exports to be of agricultural products. The importance of the sugar industry to these countries is indicated by the fact that of our total imports from them, more than 25 per cent is of this article. As the cane-sugar countries have, practi-

cally, only the United States and the English markets left to them, they would be involved in utter ruin, if the former should be lost to them. Under these circumstances, they would not be able to pay us for such purchases as they might wish to make; and the European countries, unable to sell us sugar, would turn their attention largely to the production of such agricultural products as they are now taking from us.

If our farmers should produce beets at the sacrifice of their market for wheat, corn, beef, pork products, etc., where would be their gain?

With wheat at a dollar a bushel, little thought is given to the future. But we should not forget that the present scarcity in Europe is owing, partly, to the neglect of this industry abroad,—to reduced plantings resulting from low prices in the past. While sugar sowings have increased, the sowings of wheat have been neglected. Now that conditions are reversed, will there not be a tendency abroad to increase the wheat sowings? And will not a policy of extreme protection, to stimulate the production of sugar in our country, react upon us abroad another year, when, encouraged by present high prices, our production of grain may be excessive and our producers most in need of foreign markets?

These are questions to be carefully considered by both our statesmen and our investors; for, if our proposed beet-sugar industry be fostered to an unnatural growth through continued excessive government protection, our foreign commerce may become involved in most serious complications, and our farmers may be obliged to pass through another period of depressed prices for their products, such as that from which they are just emerging.

EDWIN F. ATKINS.

THE DISUSE OF LAUGHTER.

HAS laughter gone out? Are we never again to have the honest guffaw—the loud laugh, which, as the poet says, bespeaks the vacant mind? Is this really a true account of the *rationale* of cachinnation? If so, probably it *has* gone out, at any rate in polite circles. Because we are nothing now, if we are not cultured and refined; and to be vulgar and to be ignorant are worse offences than any more explicitly forbidden in the Decalogue. And yet it almost seems a pity too. It is not well, surely, to lose any innocent and, happily, infectious expression of pleasure in a world so bedeviled as ours.

These and other profound reflections suggested themselves to me the other day at a certain polite institution which is indeed ordinarily a Temple of Silence. It was the joyous hour of luncheon, when many hard-worked officials and others revisit, for a brief hour, the glimpses of the sun—if visible at all. All was genteelly decorous, as usual, the demure waiters slid about in their usual stealthy fashion, the few lunchers busied themselves with their hurried meal, absorbed meantime in those premature evening papers which relieve the tedium of the Sybarites' breakfast. At long intervals, in the long waste of little tables, acquaintances conversed in low and gloomy tones, like *Mr. Snaffle* and his sporting friend discussing *Tatterdemalion's* year, in the "Snob Papers" long ago. Two public men of mature age were discussing, with subdued animation, some entirely grave and unexciting subject,—possibly the woes of the neglected Church Catechism, or more probably, I think, from what I overheard, the details of the County Council's Water-Bill. Their solemn appearance fitted the gravity of their theme. They might well have been Venetian senators preparing to denounce an enemy to the Council of Ten.

Suddenly a curious thing happened. The elder of the two interlocutors,—a gentleman of seventy-five summers, but as full of life and ragerie as Chaucer's *January* himself,—tickled, I am sure, by nothing worse than some comical detail of the great question, suddenly exploded in fits, in bursts, in peals of delirious, choking laughter. All through the long and desolate room it rang; crackling and quavering with the

high treble of old age. It had an uncanny sound, ghostly as the snorings which assail the reveller returning home in the small hours.

The effect was prodigious. The fat steward turned slowly round with an air of pained surprise. The prim clerk at the desk visibly reddened with shame. The noiseless waiters concealed with difficulty the ghost of a well-bred smile. Two ecclesiastical dignitaries fidgeted uneasily in their chairs, as if the whole episode were exceedingly dubious, not to say compromising. I am inclined to think that their instincts, though mistaken in this case, were right. Almost all the *best* jokes indeed *are* a little profane or improper. But soon the whole trouble was over; and again the great Water-Bill debate moved on, without a ripple, on its dull and noiseless course.

What was there in this apparently trivial incident to create such a sensation? I don't know whether it was an objection to cachinnation *per se*, or only to its being indulged in by a grave and reverend *seigneur*, such as I have described. Probably an even greater effect could have been produced on those present, if he had attempted, like *Father William* in the ballad, to stand on his head.

But I think, too, that it is noteworthy, because it shows a change in manners for which there must be a reason. In the days of our forefathers, men laughed loud and long out of fulness of heart and of stomach; and nobody was surprised, however old the laugher or loud the laugh. That was the great gain of fox-hunting, of Church and State, of a couple of bowls of punch or two bottles of port *per diem*. Life, to a sincere believer in these objects of desire, was a distinctly humorous business, if not always at breakfast or lunch time, at any rate the night before. Long ago the Homeric gods laughed loud and long with inextinguishable laughter. No one thought the worse of them. But we, alas! are a weak and snivelling race, we who live to-day. A little more of this, and it will be the club usage with laughers as it now is with snorers,—Is snoring, by the way, a way of asserting ourselves, and making a noise, with impunity?—it will be the usage, I say, to let fall a ponderous volume very close indeed to the laugher's head or to send a trembling little page to entreat him to leave off, under pain of being reported to the committee.

For my own part, I like an honest laugh; though when one comes to think of it, it certainly becomes rarer with every day that goes. And it has its inconveniences, no doubt. A literary friend of mine, who lunched daily in public, would crown a long string of witty sayings, which convulsed his friends,—and the club waiters too,—with a

loud salvo of laughter, like the sudden cry of a hyena. I am told that a sportsman never hears the noise of his own gun; and so it may be that the joker is not deafened by his own laugh. But for those who are not within earshot of the joke, the loud laugh of the narrator—perhaps his audience should laugh and not he—is not by any means an unmixed enjoyment.

Probably, it is only among people of a certain age and position that loud laughter—as compared with the simper, the snigger, or the silent grin—is now going out of fashion. On the evening of the eventful day of which I have written, I took refuge from the pitiless nightly storm in a 'bus which contained other refugees,—six young fellows who, in anything less than a deluge, would have smoked their pipes outside. What a merry crew we were! One or two demure old city men, who made up the party, regarded them with envious, but kindly eyes. What spontaneous bursts of laughter to be sure, and about almost nothing at all! The ringleader was my *vis-à-vis*, so I caught all the best things. I cannot say that I saw the point of all of them; but as far as I could see, they were not only innocent, but distinctly funny. From the round face opposite, wreathed with perpetual broad grins, came, as the good things went round, loud bursts of joyous laughter. "Seen old Ted litely?" says one. "Yuss, I see him larst week carting a load of stror." "Bli me, that 's wy he al'ors goes about with a stror in his mouff." Loud bursts of laughter greeted this sally. "And old Bill?" "Oh, didn't ye 'ear? A bloke offered him some work. 'Wot 's work,' 'e sez, 'I don't want no bloomin' work,' 'e sez, 'I 'm not tiking any.'" Roars of laughter followed, amid which the young jokers, to my regret, scuffled out into the mire and rain of the Edgware Road.

I confess I do not like the simper, whether oral or written. When I read the humorous articles—and very humorous indeed many of the hits are—of a well-known contemporary writer of the school of Thackeray, I cannot help wondering how the old lion would have liked to see his mane "*en papillotes*" and to hear his own roar reproduced, as it were, in *falsetto*, and ending in the polite little snigger which is almost inevitable in these productions. It is Thackeray, no doubt, but with a difference,—with quite as much classical learning and power of literary allusion, with much graceful badinage, and not unfrequently a pleasant subacid humor. But it is much what *Sydney Scraper*, the genteel and briefless Chancery barrister,—his mother, you will remember, was *Lady Susan*,—would have written if he had had genius and knowledge enough; and anything like a hearty laugh is not to be

got out of it. The utmost it can elicit is a well-bred and somewhat sickly smile. The broad fun of Dickens, of *Mr. Tupman* and *Mr. Winkle*, of *Sam Weller* and *Stiggins*, is probably thoroughly out of fashion for the present, and, perhaps, may never appeal to us again, as it did when we were young.

Of the broader humor of Rabelais, I am happy to think there are now few admirers. I recollect an eminent barrister, afterward a judge, with whom I read law, who, like Archdeacon Grantley, always had the works of that humorist, roaring with Gargantuan fun, safely ensconced in his drawer at chambers, to refresh him after too long a study of Vesey and Beames. The proper medium for grotesque and farcical humor is the modern stage. There "Charley's Aunt" has thrown things freely at people, and violently pursued reluctant suitors from year to year, to the uproarious delight of hundreds of thousands of honest London people. Some genuine laughter is still to be heard there,—loud, uncultured, ignorant, it may be, but genuine, and, let us at once admit it, if not very wise, yet in no degree coarse or gross.

Well, perhaps, after all, there is no help for it; and the tendency of modern civilization is to quietism, both in feeling and expression. The loud shrieks and jabbering of the savage pass, by slow degrees, through the impassioned appeals of the tub-thumper on the platform or in the pulpit, to the calm, common sense of the philosopher in his study. As it is with mirth, so it is with grief, which is not the less sincere, that it does not vent itself in hired howlings and the wake. But, reasonable as this impressive attitude is, it deprives modern life of much of its dramatic charm. You cannot be dramatic unless you are emotional, unless your passions find voice, and your sorrow and mirth also.

And so it comes to be that this old man of affairs, with his immoderate hilarity, furnishes a really good text on quite a number of important points in connection with the life of men. What led to that curious explosion which produced the striking results of which I have tried to give an account? Was it, as Hobbes said, "sudden glory,"—the consciousness of deep knowledge, preternatural acuteness, and an invincible dialectic on all questions of the Water-Supply in particular and of municipal business generally? Or was it the whole man flaming out into bitter irony and revolt against the inherent paradox of things, the antinomies which vex and perplex all thinking people? Or was it the sense of having pushed his adversary into a corner,—though, by the way, I believe the adversary was the stronger debater

of the two,—and was it only a burst of senile vanity, after all? Or was it an attempt to cover his retreat amid a storm of discordant noise, as savages do to-day with tom-toms? I am afraid we shall never know now; nor is it likely that the circumstances that gave rise to that terrific jocosity will ever be reproduced.

Alas! I fear there is no doubt that the power of irrepressible laughter is the gift of youth, and youth only, whether in nations or in individuals. Passing the drawing-room door the other afternoon, I could hear inside peal after peal of silvery, girlish laughter. It was Miss Ethel who was entertaining her school friends with tea and bread and butter and jokes. That is the time of life for laughter. I dare say the jokes would not have made me smile. But when the springtide is blossoming, and the sap is running upward in the trees, and the vernal woods are bursting into leaf and echoing with song, and, wherever you look, all is verdure and joy, almost anything can move quick laughter, more indeed than all the Water-Bills in the world. Or there is an earlier stage, when Baby is being tickled by Mamma and crows with delight. Or, though this, it is true, is often silent, there is that most beautiful of all sights,—the little blue-eyed boy or girl, who lies in the white cot at dawn and smiles, and ripples with laughter at some innocent, childish thought. It is good to hear happy laughter, it is good to watch these baby smiles.

But laughter can be not only grotesque, as in the case of the Water-Bill, above quoted, but very dreadful as well. To hear a maniac laugh, is one of the most terrible experiences. To hear a hundred laugh, as one does in nearing the Isola dei Pazzi at Venice, is a foretaste of the lower regions.

Farther on in the downward path of life, when the end is very near, the failure of the mind is often proclaimed by violent laughter. The old man is back again in the scenes of boyhood, and is going over in a dream the days of long ago. I remember well, lying awake in London lodgings, through an otherwise still June night, unable to sleep for the loud, incessant laughter pealing from the room above, where the old man of the house lay dying. When it ended, just before dawn, the old life ended with it; and in the morning his daughter came in to announce the fact and to express the hope that I had not been much disturbed. The old man, she assured me, had been in no pain, but had been going over his boyish days again,—the old brothers, long years dead and forgotten, were with him; and they were cricketing, or gathering apples, or swinging, or swimming together across the old brook, all that sleep-

less night. One was glad it was so; but the laughter had an awful sound.

I suppose there is only one man who ought never to laugh, and he is the convinced Pessimist. There seem to be a good many people nowadays, and as yet at large, who profess this dismal faith. And I suppose one might add those festive persons, if any there be, who still believe in the doctrine of Election. I don't know,—it is possible that no man is quite so bad as his beliefs would make him,—but, if I were in the position of either of these groups of thinkers, I should have little taste or inclination for mirth. I should not, I am afraid, be able to console myself, even in the pangs of seasickness, by contemplating, as the worthy minister did, "the final doom of the unregenerate," or even of those who were not originally chosen before the beginning of the world. Foolish as the Optimist may appear, confuted as he is by the myriad perplexities of the great Scheme of Things, he has, at any rate, this consolation,—he has still the power of appreciating the Divine Comedy of Life. But that is a long way from our starting-point and text, which latter was, it may be remembered by those who have patiently read through this paper, a burst of senile laughter over the humors of the water-supply of London.

LEWIS MORRIS.

SUCCESS OF THE LEVEE SYSTEM.

THE great flood in the Mississippi River, which attracted the attention and stirred the sympathies of the people of the United States a few months ago, is a thing of the past. But there are more floods to come, sooner or later. The problem of protection against them remains; and it is an important one, not only to the dwellers on the banks of the river, but to the whole people. To consider the problem in the light of the facts now available is worth the while of thoughtful citizens.

An intelligible presentation of the subject requires a brief description of the river, its habits, the situation of the lands subject to overflow, and the character of the floods.

There was a time, ages ago, when an estuary extended from the Gulf of Mexico to the hills above Cairo, Illinois. If the relative elevations of the sea and land then were as they are now, the Mississippi River ended in a waterfall, three hundred feet high, at the head of that estuary, and near the present site of the town of Commerce. A few miles eastward, the Cumberland, the Tennessee, and the Ohio leaped from like elevations into the same abyss. With this enormous downpour came the sand, clay, and loam—scoured from a million square miles of watershed—with which the estuary of the Mississippi has been filled up, and from which has been formed its present alluvial valley. Into this basin has been gathered the cream of the continent, a hundred feet deep, and twenty-nine thousand square miles in area, all subject to overflow by unrestrained floods.

The quantity of sediment carried in suspension by the current of the river is at all times great, but greatest at flood-stages. The amount which the current can carry depends on its velocity. Hence a diminution of that velocity always causes a deposit of sediment. In times of flood, the overflowing water loses a part of its velocity. When the banks are covered by forests and undergrowth, as was the case everywhere in the primeval state, and is now to a large extent, this loss of velocity is sudden and great. Consequently, the depositing process is most active nearest the river. In this way the alluvial valley has been built up by overflow; and, for the reason stated, the surface of the land is highest immediately adjacent to the banks.

Unlike the floods of the Nile, the Ganges, and most other great rivers traversing alluvial plains, those of the Mississippi occur with great irregularity, both as to time and magnitude. During the present century there have been twenty-two great floods, at intervals varying from one year to eleven years. The flood of 1882 exceeded all previous ones; and those of 1882, 1883, and 1884 were the greatest ever known in three consecutive years. Words can but feebly describe these inundations. When the five great tributaries, counting the Missouri as one, mass their floods at Cairo, their accumulated volume mounts over fifty feet above the low-water level, fills to its brim the mile-wide channel below, then, overtopping its banks,—if not prevented by levees,—spreads out in a thin, broad sheet from the hills on the east to the hills on the west, twenty-five miles at its narrowest width, eighty at the broadest, and six hundred miles long. It is as though the sea had returned and retaken possession of its ancient estuary. Except in the bayous and drains that furrow the surface at intervals, the depth of the overflow, when general, is nowhere great, compared with its extent. Usually there is just enough in the field to ruin the crop and set the fences afloat, and just enough in the house to put out the fire and saturate the beds. There it pauses, lingers from a fortnight to a month, then slowly subsides; leaving everything it has touched painted its own slimy brown. Sometimes—especially when the overflow comes in the form of sudden crevasses—the destruction caused is enormous. The direct loss in crops, fences, buildings, animals, and other property by the flood of 1882 was officially reported from sixteen parishes of Louisiana at $12,061,910.

The region liable to overflow contains from six to eight million acres of land now tillable without reclamation, and from four to six million more reclaimable at no greater cost than that expended on the marsh-lands of Ohio and Indiana now under cultivation. It will be entirely within bounds to estimate the whole area of usable land at ten million acres, of which every square foot is clear fatness. Of this area, two million acres, approximately, are embraced in the Corn Belt, which extends, roughly speaking, from Commerce to the Hatchee River; six million acres in the Cotton Belt, which lies between the Hatchee and Red rivers; and two million acres in the Sugar and Rice Belt, which extends from the Red River to the Gulf. Protected from flood, these lands would have, in broad figures, a producing capacity of sixty million bushels of corn, four million bales of cotton, two billion pounds of sugar, and one billion pounds of rice.

Of these possibilities, not a quarter has been realized. As to corn, the loss is not serious, because we have ample space for that crop elsewhere. But the climatic conditions which limit the cultivation of cotton, sugar, and rice add a peculiar value to lands on which these can be grown. Though no longer "King," cotton is still a mighty nobleman. Our average total annual crop for five years past has been over eight million bales, of which our own spindles have taken about two and one-half millions; leaving over five and one-half million bales for export. The upland cotton-fields weaken rapidly under constant cropping, and require liberal fertilizing to keep them productive. The new uses and markets lately discovered for the seed, which formerly was returned to the land as manure, have increased this drain upon the soil. We shall do well to maintain undiminished our present production from those lands. For any considerable increase in the aggregate we must look to Mississippi-River bottoms.

The protection of this great area of fertile land from overflow is possible only by means of levees, which are simply artificial embankments of earth added to the natural banks of the river, to hold the flood discharge in the channel. The use of them began with, or shortly after, the French settlement at New Orleans, a hundred and eighty years ago. The problem was, at first, a comparatively simple one. The river then occupied, at flood-stages, the entire alluvial valley. From the latitude of Baton Rouge, this valley widens, like an open fan, to the Gulf. The overflowing flood-water had, therefore, an unobstructed exit to the sea across a front of a hundred miles or more. Hence the overflow was shallow. As the land sloped rapidly away from the river, a low levee on the bank, with cross-levees extending back to the lower lands, would protect a strip, adjacent to the river, a mile or two in width.

The first levees were probably not more than three feet high. These were gradually—at first very slowly—extended up and down the river from the point of original settlement.

But, as they progressed, they confined within the channel more and more water which would otherwise have gone over the banks and found its way to the sea across the country. It thus became necessary, as they were extended, to build them higher and higher. And that process has gone on to this day. This, in a word, is the history of the levees of the Mississippi. Beginning near the mouth of the river, they have been progressively extended up-stream; confining more and more of the water within the channel, and growing in height and strength as they advanced.

Prior to 1850, the growth of the system was slow. During the following decade, it was greatly stimulated by the increasing importance and value of the cotton crop, by the development of commerce on the river attendant upon the rapid settlement of its upper valley, and by a generous grant of lands by Congress in aid of the work. At the outbreak of the Civil War, the system covered something like two-thirds of the length of the river below Cairo. The war played havoc with the levees, as with every other material interest of the South. At its close, the work of restoration was begun with impoverished resources; and its progress was necessarily very slow. By 1882, the ground lost by the ravages of the war had been partially recovered. Then came the unprecedented flood of that year, which all but destroyed the system, and left the people of the valley in a condition of poverty and despair.

At that juncture, the United States Government came to the rescue. The Mississippi River Commission—a body of seven members, of whom three are from the Engineer Corps of the army, one is from the Coast and Geodetic Survey, and three are civilians—was created by Act of Congress, approved June 28, 1879. Its prescribed functions cover all matters of national concern relating to the Mississippi River, including a complete survey of it, the improvement of its channel for navigation, and the prevention of its destructive floods. The first appropriation made by Congress, to be expended under the recommendation of the Commission, was $1,000,000, by Act of March 3, 1881; the second, $4,123,000, by Act of August 2, 1882. From the latter appropriation the Commission allotted $1,300,000 to the closure of breaks in levees caused by the flood of that year. In the application of this allotment, and of others which followed, for the maintenance and extension of levees, the Commission sought, as far as possible, by helping most those who helped themselves, to stimulate the riparian communities to do their utmost in aid of the work. With few exceptions, the response of the citizens was hearty and effective. It was recognized that all the Government would do, added to all the people could do, would be little enough. The taxes levied and paid for levee purposes went to the limit of endurance. And so, by the coöperation of local, State, and Federal authorities and resources, the levees were repaired, strengthened, and extended until, by the close of 1896, they had reached a development far in advance of anything previously attained. They represented an expenditure by the United States, since 1881, of about $12,000,000, and by the States and communities bordering the river, during the same period, of about $15,000,000. The total length of line

was approximately thirteen hundred miles. The grade was, in general, about three feet above the highest water previously known in the locality, but fell short of that in many places.

There was no flood in 1896 or 1895, and there had been none of importance in 1894. During those years, the work of levee-building was pushed with the utmost vigor. The longer the flood held off, and the nearer the system approached completion, the keener grew the interest and anxiety in the result of the test which, sooner or later, had to come. For the first time since the occupation of the valley, an attempt was to be made to conduct the entire discharge of the river at flood-stage between banks to the sea. The preparation made for that stupendous experiment was not complete, but it was as nearly so as it had been possible to make it. By March 14 of the present year, it was seen that the time was at hand. The gauge was 49 at Cairo, with more water in sight.

The history of what followed will be best understood by tracing the course of the flood. The trend of the river is such as to leave first, on the right, an alluvial area designated as the St. Francis basin; then, on the left, the Yazoo basin; and, in turn, the Tensas, Atchafalaya, and Pontchartrain basins.

The drainage of these basins is not into the river by lateral channels, as one would expect, but along lines parallel to the river, and into it again at the foot of the basin, except where the basin extends to the Gulf. It is therefore possible to build levees in long stretches of unbroken embankment. In a completed system, a single line would extend along the St. Francis front from New Madrid to near the mouth of the St. Francis,—a distance of two hundred miles. The portion of this line continuous until broken by the recent flood was one hundred and fifty miles long. There was also a continuous line in front of the Yazoo basin from the Horn Lakes to near Vicksburg, three hundred and twelve miles; another from near Arkansas City to a short distance above the mouth of Red River, three hundred and thirty-one miles; another from Red River to Fort Jackson, two hundred and seventy-four miles; and another from Baton Rouge to Fort St. Philip, one hundred and ninety-three miles. These are the great lines made possible by the relation of the alluvial basins to the river. A number of shorter lines are required for the protection of smaller areas requiring separate treatment.

A great flood unrestrained by levees overflows the natural bank progressively as it moves down-stream, and so inundates, first, the St.

Francis basin, an area of six thousand seven hundred square miles. The loss of this overflow-discharge retards the progress of the flood down the channel. The basin becomes a vast reservoir receiving an enormous volume of water, which, however, continues its progress toward the sea, retarded by the dense thickets and forests which cover much of the country. All the water that passes down the St. Francis basin must return to the main channel at or near the mouth of the St. Francis River. In like manner, the overflow into the Yazoo basin—seven thousand square miles in area—begins at its upper end, extends thence southward, and returns to the main channel at the mouth of the Yazoo.

If the water which thus escapes into the basins would stay there until the flood-discharge down the main channel had passed by, the temporary storage of surplus thus effected would reduce the flood elevation. And occasionally, in the case of a very short, quick flood, this may occur. But in the case of a prolonged, great flood, the exactly opposite effect is produced. The overflow-water, which escapes into the upper portion of the basin during the early part of the flood, works its way slowly downward, and reaches the foot of the basin just in time to meet the later instalments of the flood coming down the main channel; thus producing a great accumulation of water and a very high stage in that neighborhood. This is what would occur in marked degree if the floods were unrestrained by levees; and it does occur to the extent that such restraint is ineffectual.

In consequence of the development of the levee system from the lower reaches of the river progressively upward, to which reference has been made, the levees in the St. Francis front were in the most incomplete state of any on the river when the great flood of the present year fell upon them. During the last ten days of March they were overtopped and broken in numerous places below New Madrid. This admitted a great body of water into the central district of the St. Francis basin, which was joined, as it flowed southward, by the overflow across the unleveed portion of the basin. At Helena, the channel touches the hills on the west; while the Yazoo levee, beginning at the Horn Lakes, passes close to the river on the east. Down this narrow throat the whole discharge from above—overflowing and channel-flowing—had to pass; and it proved unequal to the strain. On the right bank, from Helena to the mouth of White River, the levees were insufficient in height; and on the left bank, there were some weak spots in old levees. On April 4, the gauge at Helena reached 51.8 feet—3.7 feet higher

than any previous record. On that day, Flower Lake crevasse on the Yazoo side occurred; and, almost simultaneously, there occurred two crevasses on the right bank below Helena, quickly followed by others in the same line of levee.

Here the destruction of levees by crevasses passed its worst. From the mouth of White River down, there were but few breaks, although there were a thousand miles of levee below that point. Most of these were in the Yazoo line; and some of them were large and enormous in outflow. In the Tensas line, three hundred and thirty-one miles long, there were only two; in the Atchafalaya line, of two hundred and seventy-four miles, there was none; and in the Pontchartrain line, one hundred and ninety-three miles in length, there was only one,—just below Baton Rouge,—which was closed within a few days without serious injury to property.

The circumstance, that more than three-fourths of the crevasses occurred in the upper quarter of the valley, is explained mainly by the fact that the levees in that part were incomplete, and inadequate in height and strength to the burden put upon them. Something is due also to the fact that the flood came upon them more suddenly and with greater rapidity of rise than in the lower reaches of the river; thus affording less opportunity for defence by temporary expedients than was available to the people below.

In every respect the flood was one of the first magnitude. At Cairo, measured by its height and duration, it exceeded all previous experiences. A stage of 49 to 50 at that place, sustained for a number of days, necessarily means a great flood below; and in this instance the water remained substantially at and above 49 from March 14 to April 17,—a stage and length of time combined never before recorded. The maximum reached was 51.6, on March 25. The highest previously known was 52.02, on February 27, 1883; but this, though a high flood, was a short one.

Below Cairo, the water generally reached heights exceeding any before known. At Helena, the stage exceeded all previous records by 3.7 feet; at Arkansas City by 1.6; at Greenville by 2.5; at Vicksburg by 3.4; at the mouth of Red River by 1.3; at New Orleans by 1.6.

The area overflowed has been officially reported at about 10,667 square miles,—a vast territory to be submerged from a single river. But if the destruction was great, the protection was greater. More than 19,000 square miles were not overflowed. Moreover, in the aggregate of overflowed lands are included extensive areas that were not, and

to a great extent cannot be, protected by levees. An opening must be left at the foot of each basin for the escape of the surface-water and drainage of the basin. Through these openings back-water enters at flood-stage and overspreads the country for miles above. While this incident of a levee system is unavoidable to a degree, the closure of the basins might be more complete in this respect than it is. The large unleveed openings at the lower ends of the basins are features of an uncompleted system. To this is to be added the fact that more than one-third of the projected line on the St. Francis front has yet to be built. The information is not at hand for an exact discrimination between lands that were inundated solely because of the crevasses and those that would have been inundated if no crevasses had occurred; but it is safe to say that the levees saved from overflow three-fourths of the lands which they were designed to protect. The aggregate length of levee destroyed by the crevasses was 8.7 miles, which is only .63 of 1 per cent of the total. No crevasses occurred in levees built by the United States.

The most signal success of the system was in the lower third of the valley. From Red River to the sea, three hundred miles by the river, the whole mighty flood went down between banks, with the exception of the outflow from one small crevasse; and this remained open for a week only. This was the more fortunate, as the inundation of a sugar plantation means practically a loss of three crops. In the corn and cotton country, the water left the overflowed lands in time for replanting; and, with favorable summer and fall weather, fair crops were reasonably to be anticipated.

The loss of life was small, and of buildings and improvements not great. The severest direct property loss was in stock;—chiefly cattle, —which, to many poor men, covered all they had. The railroad companies whose lines were inundated were probably the largest losers, directly and indirectly. Their business was totally interrupted for several weeks; and the tracks were badly damaged in many places.

But such is the recuperative power of soil and people in that wonderful region, that if the army worm and frost will but kindly spare the cotton, the ravages of the flood will be measurably repaired by Christmas Day. The great majority of the laborers are negroes; and the patience and cheerfulness with which they bear the misfortunes of flood are surprising to see. They stay by their cabins until the water covers the floors, and then retreat to the nearest dry ground and wait. When the flood has gone by, they return to their fields as blithe and gay as

birds after a storm. To the white citizens—the landowners and taxpayers—the matter is more serious. There are few unmortgaged plantations. For years, all resources have been pressed to the utmost for the building of levees. The issue of bonds, secured by pledge of future revenues, has been general. Levee taxes are high: 3 per cent on the assessed value of the land is not uncommon. The fight against the last flood was terrific,—prolonged and costly beyond any former experience. Nevertheless, the planters are in good spirits; they came out better than they had anticipated. But they do not pine for any more such victories.

Upon the whole, the great flood has demonstrated—as only a great flood could—the practical efficiency of a levee system. It has disclosed the shortcomings of the present structures, and where and how they are to be remedied. Comparing what was saved by the levees as they were with what would have been lost without them, their utility and success were beyond question. The protection which they afforded against this single flood was worth many times over the entire cost of the system as it stands to-day.

ROBERT STEWART TAYLOR.

DREDGING *VERSUS* LEVEES.

In May last, Senator George G. Vest introduced a resolution in the Senate, directing the Committee on Commerce to report on the causes of the Mississippi floods; to suggest means for preventing them; and to state what legislation was necessary. The resolution was prompted by the fact that the means employed by the Mississippi River Commission to prevent overflows and to maintain at all seasons a navigable channel had signally failed. Whenever a majority of the tributaries between Cairo and New Orleans had contributed flood-discharges simultaneously to the main river, the construction devised to carry off the accumulated volume had proved inadequate, causing breaks in the levees from five to six miles in length; while at low-water stages the depth of the channel was insufficient for navigation.

Every disastrous flood in the Mississippi brings with it advocates for creating artificial outlets for a part of the flood-discharge,—a plan opposed by the well-founded arguments of nearly all hydraulic engineers. At first sight, the proposition appears plausible. If the water-volume in the main river be reduced, it follows that the natural and artificial embankments (levees) must be relieved to that extent. But the question which cannot be logically answered is: How long does this reduction give relief, and what shall be done with the volume of water thereby diverted from its legitimate channel?

If a flow of 300,000 cubic feet per second (less than one-fifth of a flood-discharge) be turned into an artificial channel, another river as large as the Rhone or the Po is thereby created. It is officially reported that between 1861 and 1880, £2,257,872 was expended in protecting the embankment of the latter river.

Regardless of the cost, however, such an undertaking, if otherwise practicable, and the relief afforded were of a permanent nature, would be deserving of consideration. In practice the plan would be found to result in augmenting existing difficulties in proportion to the number of artificial outlets created. The Report of the Mississippi River Commission, dated June 28, 1893, says:—

> **"When completed, there would be two or more rivers, each presenting the same dangers, and requiring the same treatment as the present single channel."**

The following extract from a paper on the Yellow River in China, read by Mr. G. J. Morrison before the Shanghai Literary and Debating Society in September, 1888, is to the same effect:—

"When the Chinese have been troubled with floods in their rivers they have been too ready to cut extra channels to carry off the surplus water. This, as a rule, is the exact opposite of what should be done. The extra channel lowers the velocity, the river deposits more silt, the bed rises, and the level of the floods becomes higher than ever."

Outlets in any form, whether waste weirs, artificial reservoirs, or waterways connecting directly with the ocean, all come under the same head and require the same treatment. Each separate part of the volume of which the main channel is temporarily relieved will require a proportionate expenditure for cost of construction and maintenance; and the object in view will fail of accomplishment.

The Preliminary Report of the Mississippi River Commission, dated February 17, 1880, contains the following observations, which explain the methods that have since been employed in the treatment of the Mississippi River:—

"The work to be done, therefore, is to scour out and maintain a channel through the shoals and bars existing in those portions of the river where the width is excessive, and to build up new banks and develop new shore-lines, so as to establish, as far as practicable, the requisite conditions of uniform velocity for all stages of the river."

The Report of June 30, 1895, shows that up to that date, in accordance with this plan, $25,871,066.38 had been expended by the Commission in protecting embankments against erosion, in strengthening and raising the levees so as to withstand higher flood-discharges, and in the construction of spur-dikes in order to concentrate the scouring force in the channel. The Report of 1893 says:—

"The effect of such improvement as has already been made has been to confine between levees a much larger high-water volume, amounting in some localities, as at Lake Providence, to an increase of 40 per cent. Accompanying this increase of volume is, of course, an increase of flood-height."—(P. 3560.)

Since the organization of the Mississippi River Commission to the date of the last published Report,—June 30, 1896,—there have been published no estimates as to the probable maximum flood-height which the adopted system may develop. It must, therefore, be inferred that the observations made during that time do not as yet justify a positive conclusion on this all-important point.

The history of the River Po for one hundred and seventy-two years gives the following record of the increase of rise during flood-stages, showing an augmentation of height during that period of 4.6 feet:—

1705–1756, in the year 1755, rise 6.0 feet.
1757–1796, in the year 1777, rise 7.1 feet.
1797–1836, in the year 1833, rise 8.8 feet.
1837–1877, in the year 1872, rise 10.6 feet.

Cenni ("Monografici sull' Idraulica," page 59) attributes the increased height of the great flood of 1839 to

"the more perfect leveeing of the Po and its tributaries, preventing the lateral escape of the waters, and sending in a canal to the sea that which previously flowed over the country."

The River Po has a total length of 417.5 miles, and, with its tributaries, drains 26,798 square miles: the Mississippi River is 4,221 miles long, and, with its tributaries, drains 1,244,000 square miles. The length of the latter is, therefore, ten times that of the former: but the resources of the Mississippi are nearly fifty times those of the Po; and to compute, on statistics of the River Po, a probable maximum height of a flood-stage in the Mississippi, when the present plans are completed, would demoralize the most sanguine advocate of the jetty system as adopted by the Mississippi River Commission.

That this continuous rising of flood-waters has been duly appreciated by the members of the Commission, is evidenced by the steady improvement in the quality and increase in the strength of material employed in revetting embankments. In 1882, the estimate of cost for each running foot of mattress laid in place was something less than twelve dollars: the more recent specifications call for thirty dollars per linear foot. The object of this increased protection is to prevent erosion, as well as to force the discharge-current to scour the river-bed for purposes of navigation, and to increase the cross-sectional area in a vertical instead of a horizontal direction.

Whether even this revetment, at thirty dollars per foot, will accomplish its purpose is questionable, since the energy of the river-volume is exerted against the plane of least resistance; and future developments will have to determine the resistance offered by a compact body of sand, which has been tamped in successive years by the weight of billions of tons of water.

The following table, compiled by the writer from the published United States gauge-readings of the low-water surface, following the

flood of 1890, between Cairo and Carrolton, shows the irregularities in the descending plane throughout the entire course of the river, which the jetty system contemplates to regulate:—

From Cairo southward.		River distance, in miles.	Surface slope per mile, in decimals of a foot.
Belmont	to		
New Madrid	"	47.7	0.26
Cottonwood	"	54.3	0.51
Fulton	"	52.1	0.37
Memphis	"	54.6	0.46
Moons Landing	"	45.9	0.47
Helena	"	30.6	0.57
Sunflower	"	46.2	0.34
Mouth of White River	"	40.5	0.35
Arkansas City	"	45.1	0.33
Greenville	"	40.2	0.22
Lake Providence	"	63.8	0.31
Vicksburg	"	57.0	0.40
St. Joseph	"	49.0	0.35
Natchez	"	52.0	0.18
Red River Landing	"	65.0	0.24
Bayou Sara	"	34.2	0.14
Carrolton	"	157.5	0.03

It will be seen that the slope between Belmont and New Madrid—a distance of 47.7 miles—averages .26 foot per mile; while for the following 54.3 miles, the average slope increases to .51 foot per mile.

Irregularities in slope are invariably the result of inequalities in the bed of the river flowing through alluvion: the greater the slope, the shallower the stream. The momentum of the discharge-volume between Belmont and New Madrid, with a fall of three inches per mile, is produced largely by a translative energy which benefits the river-channel; while the steeper slope of six inches to the mile between New Madrid and Cottonwood develops more attraction, or gravity, which diminishes the scouring process, in conformity with the law that what is gained in power is lost in speed. Uniform pressure only can produce uniform results. On this point, Col. Charles R. Suter, Engineering Corps, U. S. A., in his report of December 20, 1895, says:—

"Neither correction nor permanent location of channel can be secured until the paths of the high and low rivers coincide; and the work of the former is utilized in scouring out and sweeping clear the channel which the latter is to follow."

The majority report of a special committee of the Mississippi River Commission, under date of April 10, 1896, thus concludes:—

"It may therefore be stated that the continuous revetment of caving banks from Cairo to Vicksburg, with the necessary contraction works, would cost not less than $60,000,000 or $70,000,000; that the completion would require from forty to fifty years, at the present possible rate of progress; that the annual cost of maintenance would be not less than $6,000,000 or $7,000,000; and that a navigable channel of from eight to ten feet at all stages might be expected as the result."

The river distance from Cairo to Vicksburg is six hundred miles. The foregoing estimate, therefore, covers only five-eighths of the distance between Cairo and Carrolton.

The cause of the slow rate of construction—from twelve to fifteen miles annually—is attributed to the inadequate supply of brush and willow needed for revetment, which can be secured in greater quantities only by materially increasing the cost of thirty dollars per linear foot.

During November, 1891, a committee was appointed by the Commission to investigate and report upon the feasibility of employing dredges for temporary relief to navigation during low-water stages of the river. As this was the first departure from the exclusively coercive measure heretofore adopted by the Commission, and the first recognition of any power other than that of the river itself, let us see how far the hydraulic dredge of to-day, with all the appliances of modern machinery, may become a prominent factor in solving the Mississippi River problem.

All the data collected and published by the Mississippi River Commission demonstrate that the river endeavors to create for itself a uniform path through its tortuous alluvial bed; that the concentrated energy of every low-water- or flood-discharge attempts to carry all the sediment held in suspension, and to remove to the Gulf all deposits which impede and obstruct its downward course; but that these efforts become impaired because the volume constantly varies owing to the contributions of its many tributaries. These impinge upon a former direction of current, destroy the uniformity of motion, and increase the previous slope; resulting in loss of energy and in a corresponding loss of power to carry sediment or remove deposits which obstruct the path. Every outlet from, or inlet to, a river which flows through alluvion forms a bar in the vicinity of the debouchure.

At these shoals, or bars, the hydraulic dredge affords relief by cutting a channel in harmony with the trend of the central force of the descending volume, and guides the focus of the current past embankments which are threatened with erosion.

Levee-building and jettying embankments raise the water surface.

Dredging shoals has the opposite effect, as thereby the surface is lowered, and the momentum in a succeeding flood-discharge is preserved.

Taking the river at Helena as a mean—all physical conditions considered—between Cairo and Carrolton, on May 25, 1893, the official reports show: "Gauge, 47.90; mean velocity, 6.896 feet per second, discharge, 1,540,419 cubic feet per second." This velocity is equal to 4.7 miles an hour, or 112.8 miles in twenty-four hours.

Gen. C. B. Comstock, Engineering Corps, U. S. A., in his "Note on Flood Reports," under date of June 30, 1890, says:—

> **"It is well known that flood-waves travel down at the rate of about eighty miles a day, this rate including any delay due to the reservoir effect of the main river."**

The flow of a flood-volume is therefore retarded by resisting obstructions 22.8 miles in twenty-four hours, equal to 28.5 per cent; *i.e.*, it would travel eighty miles in eighteen hours and forty minutes,—a gain of five hours and twenty minutes, which would dispose of and make room for 29,576,044,800 cubic feet of water when these obstructions are removed.

It is a well-known fact that the burrowing of crayfish and the excavation of a kingfisher's nest are sufficient causes for a break (crevasse) in the Louisiana levees. This demonstrates that the energy of a body of flowing water requires but very little to concentrate it. When, therefore, the removal of deposits by dredging, at the rate of six hundred cubic yards per hour, is called in question as a means of assistance to an existing force which annually carries nearly a billion cubic yards into the Gulf, the foregoing should be remembered.

In order to arrive at some tangible data as to the scope of the work in which the dredge can participate, the following observations are offered for consideration:

The Missouri River at St. Charles, Boonville, Glasgow, and Kansas City has a deposit, some thirty-five to fifty feet deep, overlying bedrock, as is proved by the bridge piers sunk respectively at those places. Dividing this depth by the number of years required for its deposit, the quotient will be the result. This result, a very small fraction of an inch, shows that the river practically disposes of all the sediment washed into it. It further proves that the shoals which obstruct the channel represent a quantity equal to the material removed from caving banks, or a quantity in excess of that brought into the river by its tributaries. It is this quantity—equal in volume to the

material caved from banks—that is constantly being shifted from one part of the channel to another, and that requires the aid of the hydraulic dredge to cut it through and set it in motion. And if the caving of banks be prevented, by guiding the current to scour its bed in a direction parallel to the alignment of the shore-lines, every cubic yard removed from the river by dredging is a permanent improvement.

Prior to the era of the Eads jetties at South Pass, during 1870–1871, the late Maj. C. W. Howell, Corps of Engineers, U. S. A., placed me in charge, as Civil Assistant, to conduct the improvements at Southwest Pass, which was then the principal outlet. I maintained a navigable depth of eighteen feet over the outer bar, with an intermission never exceeding twelve consecutive hours during an entire year. Whenever the channel shoaled, which occurred during flood-periods in the river only, I directed the United States fore-and-aft screw-propeller "Essayons" to the point of obstruction. The vessel was built for this purpose; drawing sixteen feet light, and twenty-two feet with water compartments filled. After settling on the shoal to the latter depth, the screws were set in motion; the blades stirred up and loosened the deposit; and the ebb-tide carried it beyond the bar. While other elements foreign to the Mississippi River problem enter into this proposition, the foregoing illustrates how little is required to preserve a channel when once established.

The Committee on Dredges of the Mississippi River Commission, reported, July 16, 1892:—

> "The shoal bars to be operated on extend from Cairo to the mouth of Red River, seven hundred and sixty-five miles. Last November, there were thirty-one crossings having less than eight feet depth; and as many of these crossings had shoal-water for a length of over a mile, it will readily be seen that the contract to be undertaken is by no means a small one."

Col. H. Flad, of that committee, reported, January 2, 1896, as follows:—

> "In my opinion the introduction of a complete system of dredging will be the only means of securing free and unobstructed navigation."

All the official reports made in connection with the dredging project by members of the Commission confine themselves to the immediate object of securing a navigable channel, and admit of no inference that the solution of the entire river problem is contemplated. It is my opinion, however, that if the shoals were dredged to a width of five hundred feet, by a depth of four or five feet, through the thirty-five or

forty miles which now obstruct navigation between Cairo and the mouth of Red River, a permanent channel would result therefrom in which the high- and low-water paths would coincide. I believe, too, that the diminishing slope for all stages of the river would gradually adjust itself; that the energy required to preserve and improve the channel would be sustained, and the flood-surface be lowered from year to year; and that, ultimately, the entire volume would be discharged between the natural embankments without overflow, and in less than one-half the time required to complete the jetty system.

An estimate, based on published statistics, shows that a dredge removes through one thousand feet of discharge-pipe 1,000,000 cubic yards of river deposit during a river season of 1,680 actual working hours: a dredging-plant to remove 20,000,000 yards would require twenty-five dredges and tugs, costing $3,000,000. Operating and maintenance costs would be:—

Operating expenses of twenty dredges (five months)....	$600,000
Care and repair.....	200,000
Engineering and contingencies.....	100,000
Annual appropriation required.....	$900,000

The foregoing observations may be thus summarized:—

Outlets in any form are inadmissible for permanent relief of flood-volumes in the Mississippi River.

Cross-jetties or spur-dikes should be avoided as producing irregularity in the flow of current between intervals; thereby destroying harmony of energy.

The general plan of transforming the river into a canal, by revetting the embankments from Cairo to the Passes, is impracticable on account of the length of time required to accomplish such a project, the unavoidable distress it inflicts upon the lower sections while the upper ones are placed under control, the great primary cost of construction, and the perpetual heavy charge for maintenance.

The system of dredging is a coöperative measure in harmony with the natural laws which control the great drainage arteries through alluvion; and the results so far obtained justify the construction of a dredging-plant of sufficient magnitude to meet the requirements.

Finally, Congress, in making appropriations for a great national highway for navigable commerce, confers a benefit on all the people without discrimination or prejudice.

GUSTAVE DYES.

ENGLAND AND THE FAMINE IN INDIA.

If responsibility for the death of one man be a grave thing, that for the death of many must weigh heavily, even when upborne by a whole nation. During the last twelvemonth, famine has besieged India. Many have died: many more have suffered. Even they who were not afraid of starvation—small traders, domestics—have been left well-nigh penniless, as the doubled and trebled price of grain drew from them the last of their scanty earnings. But in India, they that save at all are chiefly citizens of large towns. In the country districts, the desperately poor *ryot* on his rent-racked farm wins at best but a bare livelihood. He can endure no more suffering than he bears already at the hands of landlord and usurer. Add famine, and he sinks beneath his misfortunes.

It was therefore in the country that the famine was felt most severely. Horrible tales were afloat early in the winter in regard to the destitution of the poor farmers and laborers in the Central Provinces, the Northwest Provinces, and the southern part of the Bombay Presidency. The Government inspectors found many too weak to eat the food brought to them. Some died without relief, some despite it. At Sholapore and Bijapore in the south, in the region north of Bhopal and east of it in Middle India, and in the arid plains of the Punjab there was at the beginning of winter one king—Hunger.

Who was responsible? The native press of India, the Radical press of England, and many of the American papers fix the responsibility on the British Government. In this country there seems indeed to be an almost unanimous opinion that England has been culpable, that her negligence caused the famine, and that her avarice maintained it. Since my return from India, in the spring of this year, I have heard expressed hardly any other view than this. It seems to be generally accepted, as a matter of course, that England, while spending millions on the Jubilee, begrudged aid to the sufferers in India; giving it so sparingly that, but for the generous contributions of America, Russia, Japan, and other foreign nations, thousands more than actually died would have fallen a prey to starvation.

That many suffered and died, I have already stated. But, so far as I have observed, very few Americans are acquainted with the actual state of affairs. I purpose, therefore, to indicate, in a few words, the nature of the famine, the means taken to alleviate distress, and the conditions under which the needed relief was necessarily given.

In the first place, there was no universal famine in India. There were high prices, and there was lack of food among the people of certain districts; but India, as a whole, had food enough. Early in the season, with the failure of the monsoon rains in August and September, it became apparent that the price of grain would rise greatly before the winter was over. Consequently, in October, the *bunnias*, or native grain-merchants stored up all they had and refused to sell at all. It would have been absurd to expect anything else from the *bunnias*. They are keen business men. The result was that there was a good deal of looting; and the native press called on the Government to aid the looters. But the British Government could not permit looting, nor, on the other hand, could it compel the *bunnias* to sell. But, said the native press, Government might at least import grain and undersell the rapacious *bunnias*. This, too, from sound economical principles, Government refused to do. It was not a trading concern, nor could it take advantage of the famine to force grain out of an unwilling seller's hands. But it could relieve the needy. The machinery for this purpose had been ready for twenty years; and it was now at once put in motion.

But no aid was asked of England. On the contrary, the Viceroy, the sole official means of communication between India and the Home Office, telegraphed persistently that India needed no help. News of the famine had already reached England, her purse was already opened, contributions were coming in rapidly, her hand was extended generously. Then came the first cold message from the Viceroy, followed by others as chilling. These messages said in effect to England: "You are really very kind, not to say officious. When we want help, I will ask for it. At present, we need no assistance."

It must be remembered that the Viceroy spoke officially for India. Whatever blame attaches to a seeming lack of generosity on England's part must revert to the Viceroy personally. He threw a wet blanket on generosity from which it did not easily recover.

There is every reason to suppose that the Viceroy was himself deceived, when he sent the succession of optimistic telegrams which resulted in the cessation of contributions on England's part. At the

time Lord Elgin sent the first of these, he was on his annual tour of inspection. Everywhere on this tour he was met by the assurance, on the part of the native rulers, that there was no distress; that, on the contrary, everything was in a most favorable condition in their respective districts.

This was partly urbanity and partly policy. It is not polite to make an honored guest uncomfortable through the revelation of domestic unhappiness; and it is bad policy for a native ruler to admit that there is any need of interference on the part of the general Government. So the Viceroy was lavishly entertained in the northern towns of Ulwar, Oodeypore, Baroda, and other cities; and wherever he went he was assured that there was no famine! It was at this time that he sent to the Home Office the optimistic reports which stopped the outflow of charitable feeling in England. A little later, however, the Viceroy got down into the Central Provinces; and there the entertainment provided for him was a visit to the Jubbulpore almshouse,—the spot where are collected, from many miles around, the most extreme cases of destitution to be found in India. After that, the Viceroy admitted that there was something very like a famine in India—but he never recanted his report to England.

As for India herself, two questions arise at this point: What efforts were made by the Indian Government to relieve sufferers? How came it that, after famine-relief works were opened, so many died of starvation? How many, no one knows; but certainly millions less than asserted by sensational journals,—probably not a million in all.

The means taken to relieve famine-sufferers is the establishment of so-called relief-works—public improvements more or less useful—on which those in actual want may work, receiving in return fair wages and food. This system was inaugurated in 1877 by the Famine Relief Fund Commission, of which I shall have to speak again presently. These relief-works are in operation all over India; and, from a personal inspection of many of them, I can express only admiration for this stupendous charity. Hundreds of thousands of people were employed on these works. There was no hardship in the labor. At one of them, for instance, I saw more than three thousand people at work pounding stone for the highway. But this was done in the lazy manner usual in India, where no native works energetically. Each "relief-worker" had a small mallet, of about the weight of a tack-hammer; and he and his wife and children sat on the ground, contentedly chipping bits of soft stone. When the small basket, which was the centre of the

family circle, was filled with stone, the woman put it on her head and carried it to the road, while the rest of the company amused themselves in idleness till her return. The certainty of food and wages made them merry. Laughing and chatting as they worked, the company seemed more like a huge picnic-gathering than anything else. If they were starving, they were very jolly about it. But they were not starving: they were saved. And over all India such groups could be found, famine-sufferers suffering no longer—and why? Because English charity had rescued them. The numbers aided were very great. Even they who had flung up paying positions in Bombay, from fear of the plague, and had decamped to the country, found no difficulty in obtaining a place on the rolls. The Government would not interfere with trade; but it spent enormous sums in the charity of giving these poor people a substitute for their usual work in the fields. The wage, sufficient to support a man, was four cents a day,—as much as a Hindu peasant expects, and more than he usually earns. They that were unable to work were fed gratis; and in some instances they were clothed. But, as it was the common practice of those who received clothes to sell them and come back nearly naked to beg for more, it was found necessary to confine charity to the giving of food. Details in regard to the character of these works and the numbers assisted are easy to obtain. Nearly five million people were fed daily.

In regard to the second question, as to why many people died of starvation when the relief-works were in full operation, the answer is: In the first place, the number of those thus dying was much exaggerated; and, in the second place, there was scarcely an instance of real starvation where the fault did not lie with the sufferer himself.

The Hindu clings to his own village. When he is pressed for food, and quits his native place for work elsewhere, he leaves his family behind. In such a case, the family are still more loath to leave. The wife hears nothing of the absent husband, but lives in the hope of his return. The family subsist on the pickings of the street, or the charity of neighbors. It is very difficult to induce them to go to another town and place themselves under the protection of Government. When the relief-works were opened, messages were sent into every hamlet. There was no village but was informed that help was near, if the starving would come to it.

It was impossible to arrange relief-works for every half-dozen huts that went by the name of a village. On the other hand, had the inspector appeared in any such hamlet and announced that he was bring-

ing food for all that needed it, such is the character of the Hindu of low caste that the inspector would have had to feed the whole village. Everyone would have accepted charity, whether in actual need or not. Indiscriminate almsgiving was therefore out of the question. But information in regard to work and wages to be had in the neighborhood was given to all. Yet many of the benighted villagers refused to leave their homes till they were so weak that they died on the way to the relief-works, or got there in such a condition that they could not work and had to be supported at the almshouse. Many of them had simply miscalculated their staying power. They intended to remain till they were forced away from home by hunger, and when they set out on the tramp found themselves too used up to complete the journey. Others were simply dogged in their persistence. It must be remembered that the inhabitants of some of these villages are merely the remnants of wild tribes, with all the savage's reluctance to work or to enter the towns of white men.

There is, however, one point, which, albeit not well taken, was made much of by the Radical press and by the native Indian malcontents. This was the non-existence of a fund supposed to be at hand to meet every emergency in time of famine. What has become, asked the natives, of the famous Famine Relief Fund? The charge formally brought against the Government was that a fund of fifteen million pounds, raised by extra taxation for the express purpose of meeting famine, had been diverted from its legitimate object.

This would be a heavy indictment, if the premises were true. But, in point of fact, there never was any such fund, in the sense in which the word is used in formulating the charge. The Famine Relief Fund originated with the famine of 1877. The Commission appointed at that time established a fund which should represent one and a half millions yearly taken out of the annual revenue to be set aside for three objects; viz., first, for relief-works when famine actually obtained; second, for irrigation-works and railways, to enable grain to be carried into famine districts; third, for the establishment of a fund to draw on for expenses in famine years.

This whole sum was to be entered in the annual budget as an item of expenditure before any surplus could be declared. Now, in prosperous years, when there really was a surplus, this fund was of real value. But in "bad" years when there was no surplus, but a large deficit, it was valueless and, in fact, meaningless, since the operation would then consist in paying one debt and incurring another of equal value.

The fund never existed as a reserve set aside, irrespective of financial conditions, for famine purposes. It was established only as a fraction of a possible surplus. A series of bad years has, therefore, left the fund unprovided for. But, with what was raised, the most efficient work has been done already. Thousands of miles of railway have been constructed; bringing into easy communication with grain-centres those provinces liable to famine, but hitherto isolated, such as Orissa, where millions died of famine a few years ago,—not because there was no grain in India, but because it could not be carried to the sufferers.

Millions of pounds have been spent in irrigation. In the Punjab, where the arid plains were wont to hold a starving population every few years, canals as big as rivers have been constructed, and well-watered villages have taken the place of the desert. These works are on a mighty scale, and are constantly added to. The intention of the Government is to prevent famine as well as to alleviate it. It is surely good charity and good economy to do so. Moreover, it is one of the legitimate objects of the fund.

In consequence of this work, done in advance to forestall famine, India felt herself in a position to meet any ordinary scarcity, such as occurred in this last year, and occurs regularly about once in a decade. It was for this reason that the Viceroy deprecated assistance from England. India asked for no alms, because she thought herself able to meet the emergency. It takes a long time to penetrate into every village and convince reluctant savages that they must leave their huts to be saved. So, it is true that in the whole breadth of the famine-districts many did die of starvation. But it is also true that of the many whom the sensational press pictures as typical British subjects, reduced to skin and bones on account of the hardness of heart of England, the great majority are victims not of this year's famine so much as of hereditary disease and poverty, which no Government could reasonably be held responsible for.

Let anyone read in detail of the magnificent works given as charity through the whole land. Let him consider what famine meant in India, in 1833, 1869, and 1877, before England instituted these works; how many millions died because they could not be reached; at what enormous cost was purchased the relief of suffering in Bengal; and he will, I think, come to the conclusion that the Government has done more wisely in heading off famine by building railways than it would have done had it stored up a reserve fund, to find itself impotent at last through lack of means of transport.

It is easy to photograph the inmates of the most notorious almshouse in India, that at Jubbulpore, which, from its proximity to lands only recently reclaimed from savages, contains, as everyone in India knows, the worst famine-exhibit in the country;—it is easy, I say, to photograph these wretches and to pretend that they are typical cases. But let us also look at the hosts that would have been starving who are now engaged in life-giving work; at the millions found and reached, not by the casual arm of the local missionary, who does but glean behind the reaping of the Government, but by the Government itself. Let us not forget the solicitous care with which village after village has been inspected for sufferers; nor the wise mercy which refuses alms to the ablebodied, but gives work and pay to whomsoever asks for it, and food to whomsoever needs it. Let us consider, too, that in all this charity India is purely English; that, without English energy and English charity, those that died would have been counted by scores of millions, whom no Indian ruler would have exerted himself to save. Let us remember this also, that if England's own help was not eagerly accepted, it was because the English in India accepted the responsibility, and that, despite this, England yet insisted on giving ten million dollars to relieve distress. It was a beggarly sum for England to give; but if, when your poor relations are starving and you offer them ten dollars with a promise of more, the poor relations tell you, as they take the ten dollars, that they wish you would remember that they are able to take care of themselves, and that they take your ten dollars only because they don't want to hurt your feelings, why, it is asking too much of human nature to expect that you will stay away from a picnic in order to force another ten dollars into an ungrateful hand.

Without depreciating the generous instinct which prompted America to send grain to India, it may be remarked that there was no actual need of the grain. India had enough. It was well that America sent no money, for, as I have shown, charity in India is a Government matter. If money were sent to India in the care of the Government, it would merely result in reducing the annual income of the Government; for it would go into the Treasury. If, on the other hand, it were sent to the different districts, it would have to be sent to individual inspectors, or fall again into the Treasury. But the inspectors are chiefly Hindus: they are human and poorly paid. Perhaps part of the alms would reach the famine-sufferers. To send any considerable sum to other hands would be to waste a great deal of it in the machinery of distribution.

The most helpful thing to do would have been to send grain to undersell the rapacious *bunnias*, and thus to put cheap food within the reach of all. As the native merchants held their grain at twice and three times its value, it would probably have been a good speculation, as well as good charity, to send enough cheap grain to defeat their ends. It is open to debate whether the Viceroy did well in refusing aid from England; but that is a question of Anglo-Indian polity and finance. It must not be forgotten that whatever is given by India is, in so far, a gift from England, as it reduces the sum that England draws from India annually; thus the matter resolves itself, in the end, into a question of balancing the books of the Home Office. Gifts in this form were given without stint. The Indian Government poured out money freely and generously; and every rupee given was, in the end, the gift of England alone.

In conclusion, it may be said that preceding years of scarcity have made the people of India desperately poor, and that no Government on earth could prevent distress. The British Government has done all that any Government could do; and to revile England or hold her up as a monster because of the effects of the famine in India is an injustice. Such a misrepresentation of the facts is due either to simple ignorance or to a lack of honesty. E. WASHBURN HOPKINS.

HOW THE GREEKS WERE DEFEATED.

It was my good fortune to be in Larissa, the headquarters of the Greeks, for five weeks before the war began, and my rare good fortune to witness every important engagement of their main army.

On my arrival at Larissa I made a journey across the frontier by way of that long, narrow, rocky defile, the Meluna Pass, through which the Turkish army afterward entered the Thessalian plain. At the summit of the Pass, on either side of the boundary-line, I found the Turkish and the Greek watch-houses,—oblong, single-story buildings, twelve feet by twenty, counterparts of watch-houses on all summits along the frontier,—each being occupied in time of peace by from two to ten soldiers. The Greeks at that time had twenty men at their extreme outpost in the Pass; and at villages within a mile's radius they had three battalions. The Turks at their extreme outpost had two soldiers and a sergeant, who were all that stood between the Greeks and the Turkish headquarters at Elassona in the plain beyond. The Greeks were distributing their army along the frontier; while the Turks were holding theirs well in hand at Elassona. Such investigation as I was able to make, without expecting or receiving answers to vital questions, showed that the force that Edhem Pasha had thus far collected did not outnumber the force of the Greeks. He stated, however, with Oriental blandness, that he had five times as many troops as the Greeks, and could go to Athens in two weeks, whenever he chose.

The Turkish soldier's uniform was frayed, and often of humorously inharmonious parts; and the little food that he received was dealt out with great irregularity and under no set system. What the Turkish generals were pleased to call a medical corps, was pitifully inefficient. The Greek soldier had his coffee and bread in the morning, soup and mutton for dinner, and bread and cheese for supper,—better fare than he was accustomed to in his humble home. The barracks at Larissa were well built, though not over clean. Doctors, with swords clanking, swarming in the little Larissa cafés, testified to the quantity, if not quality, of surgical attendance in the Greek army. Though the hospital at Larissa was not of practical design, it was, nevertheless, a hospital.

The crack mountaineer regiments of Greek regulars, the Ephsoni, in their jaunty red caps with black tassels, and blue coats falling over the crinkly, starched fustinella skirts—the native Greek costume—were more than dimly conscious of their superiority over the ill-clad and frequently ragged fellows who glared at them from the watch-houses beyond the boundary-line. The classes of reserves at first called out were clad in full modern uniform, resembling, and of quite as good quality as, the uniform of the French soldier. Later classes, however, did not fare so well.

All the reserves were first mustered in Athens; then conveyed by transport ship to Volo; and finally by train to Larissa. Larissa was the headquarters of organization, whence troops were assigned to their posts along the frontier. Many soldiers were allowed to roam about the streets armed. Similar absence of discipline in Western Europe would have meant nightly brawls and casualties. Yet I believe no "argument" in a Larissan wine-shop had a fatal result. The only drunken man that I ever saw in Larissa was an Italian volunteer. The little Greek soldier was as free from viciousness and bad habits as he was lacking in forcefulness. His only intemperance was a racial hallucination which led him to believe he could kill a hundred Turks; whereas he did not even know how to operate the mechanism of his rifle.

Thanks to the liberality of rich Greek merchants in all parts of the world, the army was exceedingly well equipped with weapons. Their small-arm, the Grau,—a French pattern of breech-loader,—carried well, and could be reloaded with facility. They had nine batteries of field- and mountain-artillery of the latest French pattern. Besides these, they had six heavy Krupps, which they had placed at the left and in front of Larissa to defend the town, in case the Turks should succeed in breaking through Meluna.

Many of the Greek officers had been educated in France and Germany, and spoke fluently one language, often two languages, other than their own. They lined up their men in the morning, and left them to their own devices for the rest of the day. In the cafés they were punctiliously polite over their coffee; crying for war, and expressing supreme confidence in their soldiers and in themselves. The Greek soldier, they said, was like the French soldier. He chafed under restriction. Discipline was prone to detract from, rather than to improve, his fighting qualities. The Crown Prince, on his arrival, made a half-hearted attempt at strictness, at the expense of his popularity, and with little material result. Thus valuable time was wasted.

The corps of engineers lackadaisically built a pontoon bridge across the Pineios at a point where it was not needed; artillerymen received a certain amount of drill; a company of infantry was occasionally put through a few evolutions on the plain: but the cafés were crowded; the shops flourished; and everybody chattered.

The private soldier was not alone in believing himself unconquerable. Mayors, Members of Parliament, and bankers freely expressed the opinion that the Greek army would not stop short of Constantinople. Such a trouncing as little Japan had given big China, little Greece would give big Turkey, they said. Most rabid of all in its demand for an offensive campaign was the Ethnikè Hetairia, a secret society composed of well-to-do Greek traders in all parts of the world, which had set for itself the task of organizing an irregular campaign. From Macedonian and Albanian chieftains it received assurances that twenty thousand Greeks, resident in Macedonia and Albania, would rise when the word was given. These picturesque idlers, supplied with money for arms and ammunition, recrossed the borders after making grandiloquent promises.

Aside from the work done over the frontier, the agents of the society mobilized at Kalabaka, a mountain village, possibly as many as a thousand uncertain characters, who were divided into bands of thirty and forty. These mercenaries, who would not enlist until supplied with a new outfit of the native dress, boasted that they were ready to a man to die for their country. They squandered their ammunition in shooting at bowlders and shattering the insulators on telegraph poles. Finding its troops fast becoming unmanageable, and out of temper with the temerity of the Government in waiting for the Turks to attack, the Ethnikè Hetairia determined to force the hand of the enemy. Accordingly, early one morning, such of the irregulars as had not already deserted crossed the frontier at an unguarded point high up the mountains, each man carrying two hundred and fifty rounds of ammunition,—but not a single day's rations. They burned a Turkish block-house, and took two small villages. For twenty-four hours their sponsors were jubilant; but on the third day, when they came face to face with half a Turkish battalion, they scattered, and made their way back over the mountains as best they could, their spirits drooping, and their once immaculate, stiffly-starched "petticoats" soiled and limp. Not a single Macedonian or Albanian had risen in response to their movement; and they had lost only two men killed.

This raid, winked at by the Athenian Government, was a further

excuse for the Sultan to attack the country which, two months previously, had annexed an island belonging to his empire. As he was not quite ready, however, he waited another week before his troops fired the first shots at Analipsis, which set the frontier ablaze with musketry. Before, and throughout the campaign, the Turk was allowed to train the course of events as best suited his own interests. Anxious to avoid war while as yet unprepared for it, the Sultan's offer to give up Crete to Greece, if only the Powers would allow it,—when he knew the Powers would not,—was a stroke of Oriental policy worthy of the Yildiz Kiosk at its best. The standing order to the Turkish officers on the frontier, to put up with any insult rather than shoot at a Greek, further lulled King George into security, or at least into inactivity; while it allowed Edhem Pasha to proceed undisturbed with his mobilization. For a month before the war, the Greek army was little improved or increased in numbers; while Edhem drilled his ever-increasing force constantly. At last, when fully prepared, the Turkish army at Elassona made war.

It was a part of Edhem's plan, it seems, that the Greeks should still outnumber the Turks at most of the frontier posts. The first shots were fired on Saturday, April 17, 1897. On Sunday, the Turks gave up to Greek forces, after a suggestively weak resistance, at least five insignificant block-houses on the frontier. Not until after the Turks attacked it with great numbers did the Greeks increase their small garrison in Meluna Pass. They were persistent in their conviction that the Turks would come through the pass at Ravenni, because it seemed better suited for the purpose. On the mountain of Vigli at Ravenni, the Turks had placed two batteries of heavy Krupps. It seemed improbable that they were going to invade a plain with siege-guns; for the Turkish field-artillery remained in the neighborhood of Elassona, nearer to Meluna Pass than to Ravenni. However, the flower of the Greek artillery, commanded by Col. Smollenske, and supported by more infantry than there was at Meluna, was placed in the open valley of Ravenni to engage the battery of Vigli and meet any attempt to force the Pass.

On Sunday, Monday, and Tuesday,—April 18, 19, and 20,—artillery-fire continued at Ravenni. The Turkish gunners shot wildly, perhaps by intention; while the Turkish infantry, after a few shots, gave up two block-houses. At times, on Monday, the guns on Vigli seemed to have been silenced. It was evident enough that the Turks invited an attempt to storm. To this, against such soldiers as the

Turks in the intrenchments on the crest of that long, rocky incline, there could be but one result. Some of the Greek officers were strongly in favor of the attack; but, fortunately, Smollenske's adverse opinion prevailed. Had the enthusiasts had their way, the Greeks would have been slaughtered at Ravenni, at about the same hour that the Turks had secured for their main army an entrance to the Thessalian plain. It is hard to resist the opinion that Edhem Pasha, with Osman Pasha on his way from Constantinople to supersede him, had planned coincident disasters at Meluna and Ravenni. As we know, Edhem's success at Meluna alone was quite sufficient to gain his personal end.

At Meluna, the Greeks had placed a single mountain-battery, which was deserted when the surprised artillerymen, who feared that they would be cut off and taken prisoners, saw the Turkish horde coming up the defile on the run. As they advanced from position to position, the Turks brought up their artillery and infantry reinforcements to add to the impact of the next attack. By Tuesday, they had taken Liguria, a village at the mouth of the Pass, which—in the absence of reinforcements which might have been brought up on Monday, when the need of them had become self-evident—was given up by the Greeks, after a tame struggle. Though Edhem Pasha's loss at Meluna was much larger than that of the Greeks, it was surprisingly small, compared with the slaughter which he must have thought necessary to gain the first and all-important advance in his scheme of campaign.

A fine military road up the Pass, which the Greeks had just completed, and a bridge which they had left in good condition, were duly appreciated by the Turkish artillery. On the taking of Liguria, the Turks had wisely waited until they were prepared to follow its occupation by entering the plain in great force; for a retreat up Meluna might have meant the loss of artillery and almost irreparable disaster.

Up to Tuesday night, the Crown Prince maintained that all was going well; though he was careful to prevent the sending of any correspondent's telegram from Larissa. Early Wednesday morning, the Greeks, who, after being driven out of Liguria, had retreated into the plain, having received reinforcements over night, advanced toward Liguria with the view of retaking it. On seeing how well Edhem Pasha had prepared himself for such an emergency, they marched back again, and were then formed in a semicircle from one mountain-wall to another of the diamond-shaped arm of the Thessalian plain, called Mati, there to receive the advance of the Turks, who, by midday, began de-

bouching into the field and deploying into battle order. It was plain that Edhem Pasha would endeavor to flank the Greek right wing; thus throwing its left against the mountain where the plain suddenly broadened, and cutting it off from Larissa. Gen. Macris, who was in charge of the field for the Crown Prince, was evidently somewhat dazed by this turn of events. He placed most of his reserves on his left. Late in the day, the Turks advanced their skirmishers on the Greek centre; and, after drawing the fire of the enemy's masked batteries, retired—to our great surprise—at a moment when it was only too plain that the Greeks could not withstand a general attack. Larissa was jubilant that night over the report that ten thousand Turks had been killed by Greek shells.

The Turks, however, had troubles of their own, and very good reasons for remaining quiescent. A division which was forcing the Pass of Nezeros, leading into the Vale of Tempe, in order to form a junction with the main army, not having appeared as expected, Edhem Pasha, as was natural, became a little perplexed. Now that his skirmishers had revealed the position of the Greek batteries, his artillerymen took ample time so to place their own batteries as to reap advantage from this information. Furthermore, he had grounds for hoping for a stronger foothold on the right before undertaking a general battle.

On Thursday morning, April 22, the Greeks voluntarily gave up some ground on their right. A brief artillery duel, with insignificant casualties on the Greek side, completed the second day's work of what has been called the "three days' battle of Mati." The Turks were content to wait until their delayed division arrived. On this day, owing to reinforcements brought up over night, the force of the Greeks must have equalled that of the Turks in front of them; and had they attacked with spirit and skill, they might have forced the Turks back up the Pass. On Thursday night, at Larissa, it was stated that all was going well at Nezeros.

Friday, the final day of Mati, saw more play of artillery. The enemy's shell-fire and feints engaged the attention of the Greek centre and left, while their infantry dashed forward on our right. After a brief engagement, in which about one-sixth of the Greek troops and a proportionately larger number of the Turks were in action, the Greek right was forced back. At sundown, the villages, which on Wednesday had been in the rear of the Greek right, were in possession of the Turks; and the Crown Prince's army was virtually flanked.

Early on Friday evening, Larissa was speaking of victories, the

accounts of which were brought in from the plain by crazed shepherds. At nine o'clock, straggling soldiers began to arrive from Nezeros. For saying that the Greeks had been driven out of the Vale of Tempe, they were locked up as cowardly liars by the police, who reassured the town. Two hours later, the truth could be no longer concealed. Headquarters admitted that the way was open for the enemy's Nezeros division to join his right wing. From house to house ran the versatile police, crying: "The Turk is upon us! The Crown Prince says, 'Fly for your lives with all haste!'" Probably this order, as given out by Headquarters, was scarcely so abrupt and urgent, considering that the Greek army stood at a distance of eight miles between Larissa and the Turks, with six hours before daybreak in its favor; and it is to be presumed that the policemen, Greek fashion, amended their instructions to suit their own tastes and the inspiration of the moment. The natural result was a panic among the inhabitants, quickly aggravated by the arrival of panic-stricken soldiers from Nezeros. Seeing their supposed protectors powerless, men and women alike became frantic.

Meanwhile, the Greek army was in full retreat on the plain. For three days, the reserves had lain under the hot sun by day; shivering with cold at night; exposed to shell-fire, without once changing their places or firing a shot,—enough to "take the starch" out of hardened veterans.

On Friday, April 23, the great fast-day of the Greek Church, some had disdained their usual scanty rations. To their imaginations thus overwrought, the shriek of shells, the "ung" of exploding shrapnel, however slight the execution, had furnished terrible food. As they lay, some asleep, some half-asleep, some nervously awake, the stragglers coming from the Vale of Tempe stopped long enough to tell of disaster and then to hurry on to Larissa. Then came from Headquarters an order to the guns and certain companies of infantry to begin a retreat toward Larissa. This order flew along the lines, fast following the news of the defeat at Nezeros, and was acted upon by the whole army, which moved, in increasingly tumultuous disorder, toward the road leading to Larissa. On reaching the road there was a panic. Officers forgot their responsibility; companies disintegrated; the fear of each struggling man was heightened by the community of terror in which he found himself. When the Greek cavalry, coming up from the rear, attempted to pass along one side of the road, someone raised the cry, "The Turks are upon us!" Instantly there was a universal shriek, followed by almost general firing. Many pointed their rifles

into the air; many others, into the faces of comrades, instead of at the imaginary enemy. Officers used their revolvers with equal recklessness. Of those who fell under foot some had been shot; others had fainted or sunk down from sheer fright. At length the very weakness of the soldiers—the result of fasting, combined with their inherent lack of forcefulness—became the helpmate of discipline. The suicidal, tumultuous crowd moved on, gradually subsiding as it lost strength, until it flocked into the town. At dawn, the spectacle in the streets told dramatically what seven days' war had cost Greece.

A few officers, poltroons, leaving their men behind, made good their escape. Some of these were stopped, and made prisoners by armed villagers. A majority of the officers stood around, helplessly inactive. A puissant minority, angered and strengthened by shame, set about getting the soldiers together and moving them off, in disorder, it is true, but in a body, toward Pharsala,—the Pharsala that saw Pompey's downfall,—where the army was to make its next stand.

In front of and about the army was the pitiful exodus of the peasantry of the Thessalian plain, with their rude belongings strapped, along with crying children, on the backs of donkeys and in ox-carts. Shepherds might drive away their herds; but the farmers could not take their fields of grain to a place of safety. In the early morning, couriers had ridden from village to village at the rear of Larissa with the terrible news. An hour after a courier came to a village it would be emptied of its inhabitants, who cried, as they ran, that they would be massacred. The Turkish cavalry was momentarily expected to dash over the plain.

Though the phlegmatic Turks, when they awakened in the morning, were surprised to find the Greek army gone, they did not take advantage of the opportunity—revealed by the evidences of disaster lying on the plain—to finish the war then and there. Not until several hours after the departure of the last Greek, did a few Turkish cavalrymen cautiously enter the town, some distance ahead of the Turkish army. It has been asserted by the Greeks that none of their guns passed into the hands of the enemy; while the Turks' exaggeration of the number of guns actually taken is equally preposterous. I have reason to believe, that at least two batteries of light artillery were lost, as well as three of the six heavy Krupps—not one of them having yet fired a shot—bought for the defence of Larissa. Moreover, large quantities of ammunition and biscuits, and nearly all the heavier camp equipments, were left in Larissa in good condition, ready for use by the Turks.

It was the design of the Greeks to save Volo, a wealthy town, and

the haven of refuge of many of the peasants. Accordingly, a line was formed from two miles beyond Pharsala to the pass which was the doorway to Volo. About three miles from this pass was the village of Velestino; and on the hills back of it were the headquarters of Col. Smollenske, commander of this, the right wing of the Greek army. The Greek fleet, with decks cleared for action, was in the Bay of Volo; having gone there after the defeat of Mati, hoping that, in case the army failed, its heavy guns would protect the town.

After four days, the Turks, having digested their victory with cigarettes and coffee, were ready to renew fighting. Meanwhile, the Greeks had put themselves in a sort of order. Evidently, the first intention of the Turks was to force their way through Smollenske's line and on to Volo. Accordingly, they attempted to storm Smollenske's rifle-pits; but they were driven back for the first time, and with the greatest loss that any such movement had yet encountered in the campaign. This was followed by that mad charge in which the Circassian horsemen rode up a hillside, under a cross-fire of shells and musketry, in an unsuccessful attempt to take a battery in the rear. Col. Smollenske thought that half the Circassians were killed; but that is probably too high an estimate. The charge of the Light Brigade at Balaklava was not pluckier nor more foolhardy. In repulsing both these charges,—which represented about all the real fighting along the Pharsala-Velestino line,—the Greek loss was comparatively small.

The Turks, after a slight resistance, withdrew from the villages in front of Velestino, which they had taken, and were soon moving over to the left. Their plan of cutting the Greek line in two was executed with energy. On the morning of May 7, Edhem Pasha sent his fearless infantry, under heavy fire, up the hollows between the mountain-ridges which ran at right angles to the Turkish line across the plain. They intrepidly scaled the ridges, and forced the Greeks from the position. Smollenske's force was flanked and separated from the Crown Prince's force; and he retreated in an orderly manner to Almyro. The Crown Prince's force had been flanked on its left; at the same time it was being flanked on its right by the force that had flanked Smollenske. The Crown Prince, therefore, withdrew to the heights of Domoko.

So apparent was now the hopelessness of the Greek cause that even the new ministry, which had been buoyed up into almost an aggressive spirit by the "victory" of Velestino, begged for the intervention of the Powers. It was granted in the form of a demand on the Sultan for

an armistice. As there are six Powers, each having a formal foreign office, this took some time. The Sultan, as usual, was more deliberate than the six tormentors, whom he in return tormented.

Being truly Greek, the Greek Cabinet seemed to believe that articles of peace would be signed the moment the necessity of peace appealed to the ministerial mind. Before the army had been at Domoko three days, every soldier believed that there was an armistice. Inquiry of the Crown Prince and of Gen. Macris brought the assurance that it was as good as signed. At the telegraph office, delicate questioning learned that an armistice was expected. A considerable number of volunteers had come up from Athens. When they were not drilled, it was scarcely to be expected that the rest of the army should be given any exercise. Two days after Pharsala, the Turkish army appeared on the plain some ten miles from Domoko. There it rested quietly for more than a week, leisurely celebrating the important feast of Bairam. This confirmed the belief of the Greek generals that the war was at an end.

The morning of May 17 found the Crown Prince's force more than ever convinced of an armistice, and quite unprepared for an attack. At nine o'clock the whole Turkish army began to advance upon the astounded Greeks—most astounded of them all were the Crown Prince and Gen. Macris—in such a manner as to leave no doubt as to its intention. The battle of Domoko which followed was the most sanguinary of the campaign. The Greek position on the ridges seemed unassailable. The lines they threw out on the plain were driven back, within five minutes, by the advancing Turkish infantry, which came forward as if intending to make the terrible attempt of hammering their way through the ravine extending up to the town of Domoko. Across the mouth of this ravine was a line of Greek infantry. The ridges on both sides were studded with Greek batteries; and below them, well protected in rifle-pits stretching out at an angle to the line in front of the hollow, were more riflemen. The Garibaldians—Italian volunteers—were placed in the open on the side of the ridge, between the batteries and the rifle-pits at the right.

Soon it was evident that the Greeks holding the centre must either fight or lose their guns and be destroyed. Once the riflemen on the angles crowded into the hollow, there would be a butchery. For three hours, that is, until sundown,—the attack having begun at four o'clock, —the Greeks steadily returned the hot fire of the Turks, who soon ceased to advance, and doggedly hung on to the ground that they had gained. The three heavy Krupps of the Greeks were at last put in

action. Placed on the heights, quite out of reach of the Turkish field-guns, they did considerable execution. The Turkish batteries, of some forty field-guns, advanced three times in the afternoon, killing more Greeks than all the rest of their shell-fire during the entire war; while the Greek mountain field-batteries hammered the Turkish infantry with still bloodier results.

During this attack in front the Turks were making a more important movement, strategically, on the right. Gen. Macris and the Crown Prince had concluded that the Turks would try to force a pass some twelve miles from Domoko, on the Greek left. Therefore, when the battle began, though the Turks were withdrawing from the Greek left and concentrating on the centre and right, where all their batteries were, the Greek generals began to send their reserves over to the left. With amazing intrepidity, during the hot action on the centre, the Turks had fought their way over the mountains at the Greeks' far right. Some reserves were sent around at sunset—but too late. The Turkish left wing was already even with the town of Domoko. Military experts maintain that the Crown Prince, by readjusting his forces over night, could have given the phlegmatic enemy a surprise in the morning, and held him in check for several days.

The retreat over the pass to Lamia began at ten o'clock in the evening; and the next morning the battalions covering the retreat were under heavy fire. The Greeks' next stand was to be at Thermopylæ. Should the Turks advance spiritedly, Smollenske's army would be cut off from that of the Crown Prince, and forced to surrender. But the Sultan, being somewhat appeased by more blood-letting, now bowed before a letter from him whom the Greeks called "a vile enemy,"—the Czar,—who, for this act, saw his influence at Constantinople supplanted by that of Germany, though the fear of Russia was undiminished. At last the armistice came,—none too soon for the demoralized army of Greece. The war had lasted just thirty-one days.

Of the fighting at Arta on the west coast of Greece by much smaller forces, I cannot speak with authority, as I did not see it. The plan of the Turks was simply to keep the Greeks from invading. This they did after one reverse. The Greeks had advanced far into Epirus; but, with Edhem Pasha at Larissa, their retirement would have been unavoidable. In its vital characteristics, the warfare in Epirus closely resembled that of the main army.

We left the Greek navy protecting Volo. It withdrew from Volo after the retreat of Col. Smollenske. At the beginning of the war

much had been expected of it; but when it found that the forts at Arta could not be obliterated by a few shells, it seemed to be surprised out of all thought of further action. The real trouble, it is said, was simple enough. King George had made war without ammunition for his battleships, or the money to buy any: he was consequently little better off than the Sultan, whose navy would not float.

Apparently, there existed in the Greek War Office a prejudice against statistics. One person in authority would tell quite a different story from another as to the total number of the Greek army. Counting all their reserves and volunteers, the Greeks must have had at least 60,000 men. The force of the Turks was greatly overestimated. Exaggeration is a part of Turkish strategy, which also strives to terrorize the enemy by tales of cruelty. The clothing of the wounded Greeks in the church at Analipsis was not saturated with petroleum and then ignited; and Greek officers, in repeating this imaginary horror, only played into the hands of Edhem Pasha. Blandly as Edhem talked of his army of 200,000 men, I do not believe that, at any time, his force was one-third larger than that opposed to him,—not an unequal proportion, considering the fine defensive positions of the Greeks. But the Greek generals took Edhem Pasha's word for it, and thought they were greatly outnumbered.

However successful Edhem Pasha's strategy may have been, it was too simple and transparent to be masterly. He was most fortunate in his opponents. The Greek army, organized by a French staff officer on as good lines as Greek politics would allow, was nominally under the direction of ten colonels—who quarreled with one another—and of a minister-of-war. It was impossible to make any one of the colonels Commander-in-chief, on account of the jealousy of the other nine. Lest the Minister of War might assume the airs of a commander-in-chief, he was supposed to take orders from the Prime Minister; and the Prime Minister, in turn, from the King. There must, however, be a head of some sort; accordingly Crown Prince Constantin was sent to the front as Commander-in-chief, under the orders of the Cabinet. He was only twenty-nine years of age, without thorough military training, and without military experience. Moreover, he was a prince of the best royal blood, who, when he remembered his more fortunate royal cousins, was not over-appreciative of being the heir to the throne of a violent little people. He had absorbed, in some measure, from them, the Oriental dislike of rapid and decisive action. Like them, he was easily discouraged. Further, in no sense did he possess the qualities of a general. I think

the charge that he was a coward can be scarcely substantiated; for I have seen him ride deliberately through the thick of shell-fire. It is hardly necessary to add, that he was not a dashing soldier of great mental force, who would throw himself at the head of a division at a critical moment; nor that he failed to inspire enthusiasm in his troops. He was surrounded by staff officers who were quick to perceive that his personal safety and theirs were one. For "practical reasons," the Government would not allow him to shoot deserters, nor, in any sense, to execute strict military law, at a time when the army was so demoralized in the face of the enemy. His chief adviser was Gen. Macris, a pleasant old man, whose experience in war amounted to a little guerilla fighting. In a measure, it may be said that he made the plans, while the blame for their failure was heaped upon the Crown Prince. At no time was there a single strong mind dominating the Greek army. The curse of the generals, of the other officers, and of the soldiers was idleness. Though the officers spoke French well, and had studied abroad, yet in all the years that they had been preparing their regular army of 20,000 men—an enormous force for a country so small as Greece—for the war that they had courted, they had never made a map of their own frontier.

As soon as they took up a position, the Greek generals formed a plan as to how they were to be attacked. This plan was based on the exceeding simple-mindedness of the enemy; and the Greek generals would not give it up, but fought until forced to retreat. As Edhem Pasha's plan happened to be exactly opposite to what they had supposed it would be, the Turks outflanked the Greeks easily in the three stands that they made. At no time did the Greeks attempt to force the enemy to certain lines of action, at no time did they show any ability to meet a new situation. They allowed the enemy to lay down the lines of battle just as he chose. Invariably the Greeks were wofully ignorant of the enemy's position, knowledge of which—in the clear atmosphere of Greece, where mountains and plains are mostly bare of trees—could have been easily obtained by a good scouting service. Gen. Macris had a weakness for getting behind a bluff, where he could see nothing; and sometimes correspondents, who are not by any means scouts, by the simple use of their field-glasses, gave him news about the position of the Turks.

The key to the Turkish success, as I have suggested, was forcing men up the hollow between two ridges, and then on to the ridges; thus flanking the Greeks. This was the simplest of methods. Yet when

the Greek generals saw a large mass of troops at a distance of ten miles moving directly at a hollow, it seldom occurred to them, until after the Turks had actually reached the hollow, to imitate the same mass-movement in their own line. The Greeks would then go over the mountain-path lackadaisically; arriving in time to join in the retreat of their comrades from the front ridges. The little engineering work necessary to facilitate rapid movements was neglected, though there was a corps of engineers,—an advantage over the Turks, who, I believe, had none.

All the surprises of the Turks were made by daylight. How much more complete would have been the paralysis of the Greek army had the Turks appeared before the heights of Domoko at dawn! How easily Edhem Pasha could have ended the war, had he followed up his advantage after the panic at Larissa! The blunders of the Turks succeeded only because the blunders of the Greeks were greater and more numerous. The Turkish army came on, like an army of fatalists, with exceeding courage, and taking its own time. In storming the ridges, the Turkish soldier exhibited a snap that surprised the world, which had already believed in his fearlessness. But it is not yet proved that the Turk, under modern conditions, would show himself to be a fine offensive soldier. We have not forgotten how quickly the Russians, by feints, surprises, and simple technical strategy, forced the Turks on to Plevna, where, once at bay, though greatly outnumbered, they hung on like grim death. Lying in line, face to face with his opponent, the Turk will hold his own with any soldier.

To the Turkish officer, however, the chess-board work of European military science is a mystery. A night march no more occurs to him than to post his pickets properly. He does not mind sacrificing his men, and often does not mind sacrificing himself, needlessly. Not until after his breakfast,—coffee and a cigarette or two at ten o'clock in the morning,—is he ready to say to his men: "If you love Allah, advance!" A British or Continental army, by its very alacrity and head-work, must soon force a Turkish army on to the defensive. I believe that a Continental army equal in number to that of the Greeks would have sent the Turks back up the Pass, after they had debouched into the plain at Mati. Much of the best strategy of the Turks was no doubt due to German advice; though German advice could not prevail upon Edhem Pasha to relinquish certain traditions having their origin in Turkish phlegm.

The successes of Col. Smollenske, the one Greek officer who dis-

tinguished himself, were largely negative. He had, besides some military talent, the art of applying, in a measure, the knowledge he had gained at school in France and Germany. He maintained a certain amount of discipline; and his soldiers had a certain amount of enthusiasm for him. His retreats were orderly; and he covered them in something like a scientific manner. Unquestionably, he was greatly superior to any other officer who held a place of considerable responsibility. Yet he could not appreciate the necessity of vigilance, of knowing the characteristics of the general opposed to him, of ascertaining the enemy's strength and positions, and of being ready for him when he moved in force against any particular point. By the way, this Greek hero was a pure Slav.

Had the Greek officers possessed the talent which they showed superficially, had they applied, in using their fairly well equipped army, what they had learned in France and Germany, they might have prolonged the war for many months. Had the expected rising in Macedonia taken place, and had there been a real general in command, the Turks might have been put on the defensive. The artillery officers and their men often fought well, giving promise of what might be expected if the Greeks were well drilled. The cavalrymen had ruined their Hungarian horses by neglect before the war began. There was frequent talk of a cavalry charge; but—fortunately for the Greeks—it never took place. Cavalry, indeed, played but a small part in the campaign; the Turks missing several excellent opportunities to use their skilful horsemen on the Greek retreats. When two peasant boys, fresh from the plough, beat trained Western athletes in the race from Marathon, it was expected that the Greeks would march well. So they could have done, if they had not lost all their spirit. As it was, they crept along at almost a snail's pace.

The Greek officer did not know how to get work out of his men. His neglect of them, and his bearing were not such as to make them obedient or respectful. Being intensely democratic, and not being disciplined, every private became a strategist. Having been taught to believe that war was play, and that the Turk was a ragged fellow who would run at the first shot, it was in his nature, as a Greek, when he saw the Turk advance so bravely, to fly to the other extreme. Everything conspired to "funk" him: The irregulars coming into the line of fire only to run away; the tales of mutilation of Greek prisoners by the Turks; the belief, inculcated by officers, that the army had been betrayed by the King and the Crown Prince. It was impossible to make

him stand in the open at all. He would lie on the crest of a ridge, until the Turks started up an incline, and no longer; whereas, if he had remained, he could easily have disposed of the few Turks—already winded by their run—left on their feet after his volleys.

After the taking of Larissa, an investigation showed that not more than seventy or eighty Greeks had been killed, and five hundred wounded. Not 10 per cent of the wounds were dangerous. Most of them were mere abrasions caused by splinters scattered by bullets hitting the rocks behind which the Greeks were concealed. The loss of the Turks, always advancing in the open, was very large.

Not until after Domoko, was a bayonet-wound brought into a Greek hospital. The body-wounds of the Greeks were usually in the back. Surgeons who came from abroad in search of experience were somewhat disappointed by the commonplace character of their work. The Martini bullet, used by the Turks, made a small clean hole which healed quickly, and the bullet itself was easily extracted.

It was sad to see how few of the Greek officers realized what defeat meant. Most of them saw little disgrace in the flying of terror-stricken, starving peasantry; and few understood that they were fighting for all that ought to be dear to them. They rather seemed to enjoy having so fine a piece of news as "a great downfall" to chatter about in their little cafés.

FREDERICK PALMER.

LETTERS TO A LIVING AUTHOR.

It was a Western cynic, I believe, who asserted that we Americans like to treat our public men as though they were base-burning stoves, —so that we can sit around them, warm our toes at them, and spit on them. The public men whom the Western cynic had in his mind when he uttered this profound suggestion were, presumably, politicians. But our attitude toward our other public men is not distinctly different; and sometimes we seem to be quite as tolerant and almost as contemptuous in our treatment of our clergymen and our authors as we are in the way we regard our politicians. We are always ready to take a liberty with them; we feel on an equality with them; and we let our friendliness burgeon into a fraternity, which claims all the privileges of brotherhood without bearing any of its burdens.

In the religious weeklies now and again one can discover signs that the clergyman is getting a little weary of being put upon eternally; and in the literary papers here and there one can catch an echo of the sighs of the author who is almost ready to rise in open revolt. Even in England, where abuses are borne patiently, if they are of long standing, the worm is turning. In a recent chapter of Prof. Max Müller's rambling "Literary Recollections," he remarks that "Authors complain, and in many cases complain justly, of the large number of letters and visits which they receive from unknown friends and distant admirers." And Prof. Müller proceeds to a personal explanation:—

> **"I myself, though the subjects on which I write are not exactly popular, have been sitting at the receipt of such custom for many years. It is difficult to know what to do. To answer all the letters, even to acknowledge all the books, that are sent to one from India, Australia, New Zealand, from every new sphere of influence in Africa, from America, North and South, and from the principal countries of Europe, would be physically impossible."**

In another sentence Prof. Müller goes to the root of the matter:—

> **"Every writer imagines that he is the only one who writes a letter, asks a question, or sends a book; but he forgets that in this respect everybody has as much right as everybody else, and claims it too, unmindful of the rights of others, and quite unconscious that the sum total of such interruptions would swallow up the whole of a man's working day."**

In other words, the public arrogates to itself the right to demand from the author for some of its individual members, a portion of the time which the author needs for his own work. Sometimes the appeal is more specious than it is at others; but always is the victim thought to be churlish if he do not spend himself freely in the service of the unknown correspondent. One American author has even been forced, in self-defence, to print a circular letter explaining the reasons why he cannot answer with his own hand all the inquiries addressed to him.

Many of the communications which clutter the waste-basket of a popular writer are more or less bold-faced requests for his autograph. As far as these are concerned, it is not difficult to know what to do. No attention need be paid to a letter asking for an autograph, unless it contains a stamped and addressed envelope and also the card on which the signature is to be placed. If the applicant has thus done his best to minimize the trouble needed to comply with his request, perhaps there is no harm in writing the name he says he desires. Yet even here the advantages of a private secretary are obvious; and more than one collector, twenty-five years ago, was startled by the return of cards signed, "Henry Ward Beecher per F. B. Perkins, Secretary." To requests for autographs, in which the stamped-and-addressed envelope and the card have not been enclosed, nobody need pay any attention. If a stamp be enclosed, it can be kept and utilized in a worthier cause,—the courts have more than once declared the legal irresponsibility of an involuntary bailee.

As regards the books sent to an author, avowedly out of compliment, but obviously to extract from him a few words of flattery, it is not so easy to know what to do. Mr. Gladstone sometimes dashes off on a postal card a few words of casual criticism,—eulogistic more often than not. Rogers used to write a polite note expressing the pleasure he hoped to have in the perusal of the work he had received. Perhaps, it would be well to have a form of words—suggested by this practice of the banker-poet—ready to send by return mail to all those who bombard an author with their books. And this form of words would look well engraved in script on copperplate;—but who would have the courage for so frank a response?

I have in my possession—and with permission to print a selection from them—a score of letters received in the course of a single month by a certain American author residing in New York. Some are too personal to bear quotation; and in others it has been necessary to make a few excisions. Taken altogether, they are fairly representative of the

epistles that rain themselves incessantly upon the desk of an American writer—not of the first prominence even. No doubt the weight of the burden is far heavier upon the authors who stand at the head of our literature, especially if these authors happen also to be genial, kindly, and widely beloved: the sufferings of Longfellow, from attacks of this sort, and the trials of Holmes are duly recorded in their biographies.

Some of the letters in the collection I have before me are mere requests for the author's opinion. Here is one, for example:—

"Dear Sir:

Will you be kind enough to answer the following question?:—

'In your estimation, is *Portia* the judge in the trial scene in the "Merchant of Venice," or the *Duke?* Can you cite me some good authority on this point?'

Yours very truly,

A. B."

Here is another essentially similar:—

"Will you please give me your personal opinion as to the sanity or insanity of Shakspere's 'Hamlet,' and oblige

C. D."

And here is a third, more complimentary in its opening sentence,—perhaps because the writer of it was under the necessity of convincing himself that the author he was addressing was duly qualified to decide a question of pictorial criticism:—

"Dear Sir:

You are a man of taste, good taste, and, I believe, an excellent judge of paintings, being familiar with the works of the artists of the day; therefore, a friend and I have decided to select you as the arbitrator in a little difference of opinion between us, if you will be so kind as to act in that capacity.

The question is this: Which of the two men, Detaille or DeNouville (*sic*), is generally conceded to be the greater painter? Did DeNouville ever paint a picture acknowledged to be as great a creation as 'The Siege of Champigny' by Detaille, now hung in the Metropolitan Museum? Before his death did the works of DeNouville bring generally higher prices than those of Detaille, or was the reverse the case?

Thanking you in advance for you kindness, I am

Yours very respectfully,

E. F."

The fourth letter is a type of many others, in that it concerns itself with a question of usage in English speech. On no other subject is the uninvited correspondent more prolific than on propriety of diction.

"Pardon my writing you unaddressed, but I want to ask your opinion in a dispute on which I have been able to find no printed authority. Is it more correct to write 'I regret that I cannot come to dinner' or that 'I cannot go'? The

writer of the phrase questioned knew the giver of the dinner intimately; the dinner was given in this friend's own house. Believe that I hesitate to trouble you in this, but that your opinion will be gratefully received.

Yours most sincerely,

G. H."

These four letters could each have been answered by a single sentence on a postal card. The writer of the fifth letter enclosed his postal card for a reply; but he calmly asked for an amount of labor larger than that required to reply to all the other four.

"Dear Sir:

I am making a collection of the dramatic masterpieces of certain poets, and take this means of asking your opinion. The enclosed postal contains the names of the poets whose plays I am collecting.

You would confer a very great favor upon me if you would be so kind as to write opposite each name what, in your opinion, is the best play of each author.

Hoping that you will pardon the liberty that I have taken, I beg to be

Yours very truly,

I. J."

But the demand of this correspondent was modest, when compared with the request proffered by the writer of the sixth letter:—

"Dear Sir:

I inclose you under separate cover a manuscript entitled 'X. Y. Z.' It will take you about forty-five minutes to read it. That to a busy man is a great deal of time, I know; but nevertheless, I am going to ask of you the very great favor of giving me that much of your time, reading the manuscript and telling me if it is worth anything—if it would be worth while even to try again.

I do not like to ask such a favor. If I had it to do in person, probably my courage would fail me; but necessity knows no law—I want criticism—and I take advantage of the friendly cover of a letter. I trust some time in the future to be able to render you a *quid pro quo*—for the time spent. Your kindly criticism and advice I can repay only with thanks.

Very respectfully,

K. L."

This last letter is a specimen of a kind common enough,—the request for criticism of a manuscript. Sometimes the correspondents go further, and beg the author, to whom they have forwarded their unpublished masterpieces, to find a publisher for them. Sir Walter Scott once paid the postage on a bulky parcel from America only to discover that it was a second copy of a manuscript sent to him across the Atlantic by some unknown American admirer, who besought the Scotch poet to get it published for him in Great Britain.

A seventh letter may be printed as typical of a class greatly on the increase with the recent astonishing growth in the number of women's clubs, at all of which papers are read with unintermitting regularity.

"My dear Sir:

If, in your very busy life, you can find time to write a few lines to a club of women far removed from the Eastern metropolis in which you live, yet closely bound by ties of admiration to one who they feel has done so much for American literature, they will appreciate the favor. We have begun a study of American critics and criticism, and have collected your work along this line to begin with. Will you kindly give me an expression of your opinion on the subject of American criticism,—how it stands as compared with criticisms of other nations, how it may be improved, the qualifications necessary for a good critic, etc., also whom do you consider the best American critic? If you can suggest any books or other articles that will help me in preparing a sketch of your work in this field, I shall be greatly obliged. . . . Trusting that you will favor me with a reply, which I shall appreciate as a great favor, I am

Most sincerely,

M. N."

Finally, there is yet another group of correspondents who pester the author,—and in some respects these are the most pestiferous of all. Their case is the worst because they belong to a class that should know better. They are the editors who call upon the author to contribute gratuitous copy by taking part in a so-called "symposium,"—of a truth, a Barmecide feast to the poor contributors. Sometimes, however, the request is so courteously phrased that it is denied merely with a regret that there are only twenty-four hours in the day. Here is a letter of this sort:—

"My dear Sir:

I desire to ask you if in your college days you ever had any experience with the duties of the student editor. I am at present so perplexed and harassed with speculations as to how I can make the new University of Z's annual a satisfactory one to the college community, that I have determined to make a request of the five or six public men whose writings have led us to look upon them as our best friends,—a request whose impertinence would have caused me to blush in those younger and better days before I became a college editor. Will you answer for me one of these two questions?:—

First. What were one or two of your experiences when you were the editor of a college literary annual?

Second. If you were never so afflicted, what would you do if you were? What would you make your aim?

Don't feel that I shall cast a blight over your whole future career, by adverse criticisms in my editorials, if you refuse to comply with my modest (?) request. I realize that there must be a limit to the time and the good nature of everyone, and I shall continue to admire you and what you write, whatever reception my letter may meet with at your hands. So don't feel that you are being coerced.

In all seriousness, however, I am sure that our students would appreciate a few words from your pen if you could find time to write them before Jan. 22nd. We could regard it as nothing less than a great favor to the whole University.

I enclose a stamped and addressed envelope, and only ask further, that, in

case your hands are too full with other and more profitable work, you return to me the empty envelope so that I may know that my letter has not miscarried.

Very respectfully yours,

O. P.,

Managing Editor."

It is in the epistle of "Eloisa to Abelard" that Pope asserts that "Heav'n first taught letters for some wretch's aid"; and after reading the correspondence cited in the preceding paragraphs, few, I think, would be inclined to doubt the papal infallibility of this assertion. And I think, also, that few readers would deny that the time has come when the author is justified in defending himself and his working hours against these insidious appeals for gratuitous labor. Literature can now fairly claim to be one of the learned professions, fully on a level with medicine and the law and the church. The minister who acts as supply, expects to be paid; and the lawyer who has advised his client not to go to law sends in his bill.

When a man is master of his calling, his opinion as an expert is very valuable; and the basis of his charge should be not the time spent on the question submitted, but the knowledge needed to solve it. A laboring man is paid for his time, but a professional man for his skill; and the man of letters has a right to expect the pay of an expert, whenever his advice is sought. There is an old saying in the West that "a saddle-bag opinion is worth what it cost."

The sooner the position of the author is understood, the better for both sides. The public will gain as well as the man of letters; for the latter will feel bound to give good measure for the money received.

ARTHUR PENN.

AMERICAN EXCAVATIONS IN GREECE.—IV.

THIS article and the next—my concluding paper—will deal, as fully as their limits permit, with the rest of the archæological work of the American Scholars in Greece: their exploration of the Heræum, which has proved the most fruitful in finds; their least satisfactory ventures in Laconia; their still unreported tentative researches at Phlius; and the most promising of all their undertakings—that on the vast site of Corinth.

Early in 1891, the Greek Government conceded to the American School the right to excavate for seven years on any two out of the five sites suggested by Dr. Waldstein, who, accompanied by Mr. Brownson, examined, during the month of April, the Argive Heræum, Argos itself, Tegea, Messene, Elis, and Sparta. Dr. Waldstein decided upon the first and last of these sites; remarking very truly that at the Heræum "the excavations of Bursian and Rangabé, many years ago, certainly require completion."

There is, perhaps, no locality in Greece so closely and so continuously connected with the development and vicissitudes of the Hellenic race, from remote antiquity to the present day, as the Argive territory. Within it stand the two renowned centres of the earliest Greek civilization, Mycenæ and Tiryns; while Argos is admitted to be the most ancient city in Greece, and has figured prominently in the history of the country down to the War of Independence.

Several places in Greece were known by the name Argos, which, according to Strabo (viii. 372), signified, in the Macedonian and Thessalian idiom, a plain. Homer distinguishes between the Pelasgic Argos in Thessaly, and the Achæan Argos in the Peloponnesus; and he employs the latter designation, or Argos simply, in three acceptations; viz., (*a*) as denoting the city over which Diomedes then reigned; (*b*) as comprising the kingdom of Agamemnon, with Mycenæ as its capital; (*c*) as applied to the whole of the Peloponnesus, in contradistinction to the rest of Greece beyond the Isthmus. In an even wider sense he speaks of all the Greeks as "Argeioi" ("Argivi" in the Roman poets); and this prevalence of the name is in itself indicative

of the paramount importance of Argos in the heroic period. By later Greek writers it is applied both to the city and to the entire plain, which latter, however, is more distinctly known as Argolis or Argeia.

The Argive territory is situated in Eastern Peloponnesus, immediately to the north of the Argolic gulf, where it spreads out toward the sea. On all other sides it is shut in by more or less high mountains, which thus form the "hollow Argos," as Sophocles describes it ("Œd. Col.," 378). This plain, some twelve miles in length, four to five in width, and watered by the Inachus and the Erasinus, was in antiquity fertile and famed for its breed of horses; but its higher levels were very dry: whence the "thirsty Argos" of Homer. Phoroneus, son of Inachus, the local river-god, appears in the earliest myths as king of Argos. Later, however, Danaos is said to have migrated here from Egypt (*circ.* 1475 B.C.), landing at a spot known as Pyramia. Four pyramids (the extant remains of two of which are described by Leake and Mure), which dotted the plain of Argos, seemed to testify at all times to the veracity of the tradition; the more so as similar structures are met with nowhere else in Greece. But the American discoveries have now placed beyond all doubt the early and intimate connection of Argos with Egypt. Likewise, the myth of the fifty Danaides, married to the sons of Ægyptos and condemned in the lower world eternally to draw water from a well in sieves, is but a faithful allegory of the system of irrigation introduced by Danaos. Underground galleries, such as have now been clearly traced, intercepted the rain-water, which sinks readily through the porous and sieve-like soil of Argos.

Dissensions between the descendants of Danaos led to the foundation of Tiryns in 1370 B.C., and, a century later, the Pelopidæ raised Mycenæ to great power; so that Agamemnon's sway extended over Sicyon and Corinth when the Greeks chose him as leader in their expedition against Troy. After the Dorian conquest of the Peloponnesus, Temenos, the oldest of the Heraclidæ, reigned at Argos, which now rapidly regained its former influence and power. Argos was recognized as the mother-city of a league of Doric states; and Pheidon, the tenth in descent from Temenos, held the undisputed leadership in the peninsula, after routing the Lacedæmonians at Hysiæ, in 669 B.C. But their continued struggles against Sparta exhausted the Argives, who were finally defeated by Cleomenes near Tiryns in 510, and gave place to Sparta as the leading power in the Peloponnesus. By 463, they had recovered sufficiently to subdue Mycenæ and Tiryns, which they destroyed; transferring their inhabitants to the outskirts of Argos.

The entire population of the Argive territory at about that time is computed at 100,000; Argos being then, in point of magnitude and opulence, the second city in the Peloponnesus after Corinth. Its ancient civilization and its reverential cult of the gods aided the development of the fine arts; the city possessed many temples; and the temples were full of statues. Argos, therefore, at an early date became famous for its school of sculpture, especially under Ageladas, the master of Phidias, Myron, and his own townsman, Polycleitus,—the three greatest statuaries of the ancient world. Polycleitus, the rival of Phidias, continued active till 423 B.C., producing the great chryselephantine statue of Hera, which was considered superior in technique to the gold-and-ivory Athena of Phidias in the Parthenon, and the no less celebrated "Doryphoros," of which a copy exists and which, for the perfection and justness of its proportions, was styled "the Canon." The Argive school was, however, chiefly famous for its statues of victors at athletic contests.

In 146 B.C., Argos was merged into the Roman province of Achaia. During Byzantine rule, the primacy of the district passed to Nauplia, the common harbor of the Argive towns, which remains to this day the chief town of that nomarchy. The Byzantines held the place till A.D. 1247; and subsequently a "duchy of Argos" was founded by some of the Frank adventurers in whom the Crusaders had by that time degenerated. In 1388, the widow of Pietro di Federico Cornaro sold the lands and forts of the duchy to the Republic of Venice for two thousand ducats of gold and a life annuity of seven hundred ducats. In 1397, Argos was captured by Sultan Bajazet I, who demolished its walls; and the place remained for a time deserted. It was subsequently rebuilt by the Venetians, from whom it was retaken by the Turks in 1463. It was again seized by the Venetians, and for a third time by the Turks, who held it up to 1821. On December 12 of that year the first National Assembly of the revolted Greeks met at Argos, on the rows of seats of the ancient theatre, hewn in the rock of the hill from the foot of which the modern town extends into the plain.

Argos is about eight miles distant from Nauplia to the southeast, five from Tiryns in the same direction, and seven miles south of Mycenæ. The conical hill, the steep, rocky sides of which rise above the town, is the ancient *Larissa*,—a Pelasgic term signifying an acropolis or citadel. Its summit, nine hundred and fifty feet high, is crowned by the remains of the old Cyclopean stronghold, which has given place to a mediæval fortress, famous in recent times for its gallant defence, by a

handful of Greeks under Demetrius Ypsilanti, against the Turkish army of Dram-Ali.

On the *Larissa* stood the sacred shrine of Apollo Pythius, the patron of the Argive Amphictyony. But the great divinity of Argos, reverenced above all others, was Hera, who had won the land in a contest with Poseidon. She appears in the "Iliad" as the protectress of the Argives; and her worship remained supreme with her people to the end. Livy (xxxiv. 24) records the invocation of Aristænus, the general of the Achæan League (195 B.C.)—"Juna regina, cujus in tutela Argi sunt." In the city itself she was worshipped in two temples as Hera Acræa and Hera Antheia. But her great sanctuary was the Heræum, situated on an elevation to the right of the wayfarer from Argos to Mycenæ, nearer by two-thirds to the latter city, which, during the years of its hegemony in Argolis, presided over the sanctuary. A "sacred way" connected Mycenæ with the Heræum. It was "the common custom of the Greeks to place temples of great resort at a short distance without the city walls." On the fall of Mycenæ, however, Argos obtained exclusive control of the sanctuary, and held the appointment of the high priestess of the temple, after whose years of office the Argives reckoned their calendar.

Once in four years the great festival of the goddess was celebrated, when nearly the whole population of Argos marched in pomp and solemnity to the sanctuary; the chariot of the priestess being drawn by a pair of white oxen. It was on an occasion similar to this that, the oxen being tardy in arriving from the country, Cleobis and Biton yoked themselves to their mother's chariot, and, having drawn Cydippe to the temple, a distance of forty-five stadia, laid themselves to rest, after assisting at the festival. And the goddess, in response to the prayer of her priestess, to reward their filial devotion by the greatest boon she could bestow upon men, reposed the youths in eternal sleep. The Argives erected statues to the brothers at Delphi; and Pausanias (ii. 20) saw a relief at Argos representing the scene as Solon had related the story to Crœsus, when pressed by him to name a man happier than himself (Herodotus, i. 31). For the fame of Hera's sanctuary had spread beyond Greece. In Greece itself it was esteemed second only to Olympia and Delphi; and it was here, according to a legend which reaches us through a later source (Dictys Cret., i. 16), that the assembled Greeks chose Agamemnon as their leader in their expedition against Troy, and swore allegiance to him.

The original temple was destroyed by fire in the ninth year of the

Peloponnesian war (423 B.C.) through the negligence of the priestess Chrysis, who fell asleep after placing a lamp near some dried wreaths. The fact that Thucydides (iv. 133) breaks his narrative to refer to this event is proof of the importance which the whole Greek world attached to the ancient sanctuary. The Argives, therefore, in the ninetieth Olympiad (420–416 B.C.) employed Eupolemos, their great architect, to build a new temple, on a scale of greater splendor, a little below the old one, whose hallowed precincts were not disturbed. Pausanias, who has left us a minute description of the site (ii. 17–18), states that the foundations "and whatever else the flames had spared" were visible on the higher ground; and before them was the statue of Chrysis. He then describes the new temple, above the columns of which, *i. e.*, on the metopes and pediments, were represented, on one side, the birth of Zeus and the Gigantomachia, and on the other, the war against Troy (probably the departure of Agamemnon and his comrades), and the capture of Ilium. Before the entrance were the statues of all the priestesses of the temple, and of other heroes, including that of Orestes, the son of Agamemnon. The cella contained the colossal chryselephantine statue of Hera by Polycleitus; the goddess being seated on a throne, with a pomegranate in one hand, and in the other a sceptre surmounted by a cuckoo—her sacred bird. Another statue, in ivory and gold, that of Hebe, by Naucydes, the brother of Polycleitus, had disappeared. But the temple still contained many other works of art and innumerable treasures: a sacred xoanon—a wooden image of Hera made out of wild-pear and brought by the Argives from Tiryns when they destroyed that place; the shield which Menelaus took from Euphorbus at Troy; the couch of Hera; a silver altar; a golden crown and purple robe, offered by Nero; and a peacock—the symbol of the goddess—made of gold and set with precious stones, which Hadrian presented to the temple.

Pausanias goes on to define the site of the sanctuary as being on the lower declivity of Mount Eubœa, with the Eleutherion flowing on the one side, the northwestern, and the Asterion, on the other, the southeastern. Asterion, it was fabled, had three daughters, who were the nurses of Hera; viz., Eubœa, from whom the mountain on which the Heræum stood took its name; Acræa, whose name was given to the hill opposite; and Prosymna, by whose name the region below the sanctuary was known. A herb also, which grew on the banks of the river, was called Asterion; and worshippers formed chaplets of its leaves and offered them to Hera. The distances of the sanctuary from Argos and

Mycenæ are given by both Pausanias and Strabo, and also by Herodotus, in relating the story of Cydippe.

It will thus be seen that the precision of Pausanias is such as "almost to guide the antiquary by the hand in his researches." Yet the site of the Heræum, long and anxiously sought for, eluded the persistent inquiries of travellers in Greece. Leake ("Morea," ii. 387 *et seq.*) relates how, on March 17, 1806, he followed the road from Mycenæ to Nauplia "for about ten miles in search of the Heræum," and how, "not finding any traces of the temple," he crossed the plain to a spot where stood "two small ruined churches, in the wall of one of which he observed a part of a Doric column of such a large diameter that he had little doubt of its having been brought from the ruins of the Heræum." Leake, like his predecessors, was thus baffled in his search after what appeared to be a will-o'-the-wisp. He had at least the satisfaction of announcing later its discovery by a countryman of his. Gen. Th. Gordon, one of the noble band of Philhellenes who, in 1821, took part in the Greek struggle for independence, visited the country again in 1828 and resided at Argos; devoting his leisure from military duties to archæological research. He had made repeated, but fruitless, endeavors to trace the Heræum, when, in the autumn of 1831, while on a shooting expedition in no way connected with this purpose, his attention was attracted by a massive polygonal wall dividing two successive levels of Mount Eubœa. He could entertain no doubt that chance had revealed to him the secret which had not yielded to systematic search; and he soon verified, as exact, the details given by Pausanias.

The late George Finlay, who was then at Nauplia, visited the site, and sent an account of the discovery to Leake, who published it in his "Peloponnesiaca" (pp. 258–264); the testimony of Prof. Friedrich Thiersch, of Munich, the celebrated Hellenist and Philhellene, being also adduced. Finlay explains to Leake why the latter had failed to hit upon the spot: "It is a few hundred yards nearer the hills than where you passed; but two ravines [those formed by the two rivers] isolate the site and prevent it from being reached by riding close along the slope of the hills." It lies three-quarters of a mile to the left of the modern post-road leading to Nauplia; and this road runs along the easier but more extended line on the plain; whereas the ancient festal way from Mycenæ passed higher up the hills, but was abandoned when, through neglect, the torrents broke it up and carried away the bridges. This circumstance would also explain the apparent discrepancy in the distances given by Pausanias and Strabo respectively. Mr. Finlay pro-

ceeds to describe the remains then visible above ground, including "the fragment of a Doric column eleven feet six inches in circumference, with twenty flutings . . . a quantity of pottery scattered about," etc. He also speaks of certain subterraneous passages into which he penetrated for some distance.

When Gordon visited Greece once more, he undertook, at his own cost, in the autumn of 1836, an excavation on a limited scale. He was again accompanied by Mr. Finlay, whose account of the exploration is inserted in the "Peloponnesiaca" along with an excellent plan of the site by "J. Robertson, of the staff of Maj.-Gen. Gordon, of the Greek forces in the Peloponnesus." Gordon rightly judged that the new temple would be found under the Cyclopean wall; and there he actually unearthed its foundations. He recovered, among other objects, "part of a marble peacock, part of a large antefix of terra cotta painted like the tail of a peacock, a lion of bronze, six inches long," etc. These and other indications enabled Leake to conjecture accurately enough the character and style of the temple. Gordon's discovery is also recorded at length by Wm. Mure, in his "Journal of a Tour in Greece" (1842, ii. 177–182), who adds: "to judge from its success, were it to be followed up on a more extended plan, it could not fail to be productive of valuable results."

This advice was acted upon by Prof. Conrad Bursian and the Greek scholar, the late A. Rangabé, sometime Greek Envoy in Washington. Their joint exploration of the Heræum in the autumn of 1854, though limited by want of funds, elucidated practically every point that remained in doubt. Not only was the exact position of both temples ascertained, but it was established that the later of the two was a Doric peripteral temple with six columns at each end; and the recovered fragments of sculpture confirmed the belief that the edifice was one of the most perfect specimens of the great epoch of Greek art and architecture. A *stoa*, the "cross-cistern," and other structures, now completely cleared by the American explorers, were also located, as may be seen from the plans appended to Bursian's "Geographie von Griech." (ii. 47) and Curtius's "Peloponnesus" (ii. 395, *taf.* xvi). Bursian published a more detailed account in the "Bulletino" (1854, ii. 13), while Rangabé's report appeared in the form of a letter to the German archæologist, L. Ross ("Ausgrabung beim Tempel der Hera unweit Argos," Halle, 1855). To this report is appended a list of the 552 objects recovered during the excavation; including 72 architectural and 350 sculptured fragments,—heads, torsos, arms, draperies, etc.,—2 inscrip-

tions, 17 vases, etc., all of which were deposited in the small museum at Argos.

It will thus be seen that the only task left to be accomplished was to remove the superincumbent soil from remains as to the nature and value of which there remained no reasonable doubt. Dr. Waldstein had made a very judicious choice. Never was an exploration undertaken on premises more certain, within lines more accurately defined, or on a site more precisely circumscribed. The entire extent of the sacred precinct is about 230 metres long by 110 wide. Mount Eubœa, itself a sort of foothill of the loftier Mount Tretus,—one of the two elevations between which Mycenæ lies,—slopes gently toward the south, and forms an irregular triangle with its base toward the plain of Argos. The surface of this high ground is divided into three terraces or platforms, rising one above the other. The uppermost terrace, on which the old temple stood, measures 50 metres from east to west, and is nearly as wide. It is retained on the south and partly at the ends by the "Cyclopean wall," already noticed, which is built of huge irregular blocks of great antiquity. The wall is still in good preservation and, as if to mock the failures of those that had sought the spot, forms a conspicuous object, clearly visible from the plain opposite and as far as Argos and Nauplia. The second terrace, a little larger than the first, lies twelve metres lower down, immediately under the wall. On it rose the temple built by Eupolemos. The ground then slopes quickly toward the plain; but it is precipitous on the east side, where it is retained by a wall of Hellenic masonry. Toward the west it inclines to a third terrace, which is the most extensive of the three. The entire site is enclosed on three sides by the ravines formed by the Asterion and Eleutherion, which are now dried up, except when swollen into torrents by heavy rains. These ravines offered additional facilities for the disposal of the excavated soil,—always a source of embarrassment to explorers.

The first campaign began on February 15, 1892, and was continued till the first week in April under Dr. Waldstein, who was accompanied by Messrs. C. L. Brownson, B. Newhall, and H. F. De Cou; Mr. T. A. Fox, architect, of Boston, having charge of the surveys, measurements, and plans. Work was begun simultaneously on the three plateaus with a large and gradually increasing body of men; and the explorers had not long to wait for substantial results. On the lowest terrace the foundations of a *stoa* 70 metres long were soon laid bare. Though no part of the superstructure was left, its similarity to the *stoa* of Eumenes at Athens was clear, and its masonry apparently contem-

poraneous with that of the new temple. At the eastern extremity of this terrace the cross-shaped cistern, already noticed, was identified, and near it was unearthed what seemed to be a bath. It was here, no doubt, that worshippers purified themselves before proceeding to the shrine. A little beyond, a shaft, sunk vertically in the rock, having been cleared of earth, was found to branch off into several underground galleries, one of which was followed for a distance of some thirty-four metres. The explorers express no definite opinion as to the purpose of these galleries. The conjecture that one of them was an "aqueduct fed by the Eleutherion" is not tenable, since this gallery is carried across the bed of that river, a distance of fourteen metres, by means of a walled and roofed passage. I venture to suggest that we have here a system of conduits made to intercept the water which flows under the porous soil of Argos, exactly as it does in the plain of Athens. In a formation of schist, the water, which elsewhere is drained into streams, runs underground into the sea. Many of those who bathe in the Bay of Phalerum have tasted the sweet water bubbling up from the bed of the sea. A few years ago a most elaborate system of similar galleries was discovered under the slope of Mount Parnes; and the ancient aqueduct in the plain, into which the water thus collected flowed, was traced all the way to Athens. When cleared of the accumulated soil, these galleries began again to yield a liberal supply of water. The waterworks of the town of Brighton, in England, are constructed on a like principle. I have, therefore, little doubt that the galleries under the Heræum, if cleared to their farthest extremities, would again be filled with water. The ancient sanctuary had no other water-supply.

On the upper plateau, the ruins of the earlier temple were found, —presumably much in the condition in which Pausanias saw them. They consist of a low wall 14.30 metres long, on some of the upper stones of which are visible the circles traced for the columns. A considerable extent of the terrace is paved with polygonal stones. Masses of porous stone, split by the action of fire, and a thick layer of burnt wood tell the story of a conflagration. Judging from the absence of other vestiges, the walls of the superstructure were, in all probability, of wood and clay, like those of the temple of Hera at Olympia. The foundation-walls, however, appear to be of an earlier date than the Olympian Heræum; in which case we have here the earliest temple in Hellas. Certain rude engraved stones found on this terrace are of the highest interest in respect to the history of the primitive art of Greece.

On the next terrace, the foundations of the second temple having

been laid bare, its stereobate or platform was found to measure 39.60 by 19.94 metres. Only a few drums and one capital of a column were recovered during the first season; but as the latter supplied the diameter at the neck of the column, it served as a sufficient guide to the other dimensions. The absence of more considerable remains made it clear that during the Middle Ages the temple must have suffered complete devastation. It may have fallen into ruins at an earlier date. But undoubtedly it was then plundered systematically; since nothing remains, even of the upper courses of the stylobate, and in places parts of the foundations themselves have been broken up. Block after block must have been hurled into the plain below, to be used as building-material at Argos and as far as Nauplia. Unmistakable fragments of the temple have been noticed imbedded in buildings along the plain.

Numerous fragments of sculpture were recovered—evidently parts of the subjects adorning the pediments and metopes. The most important of these is the now famous female head, unearthed on February 4, only a foot and a half below ground. A few days later a very fine male torso, in perfect preservation, was found inside the temple. Another torso, apparently of an Amazon, and two heads, certainly belonging to the metopes, followed. The beautiful female head Dr. Waldstein identified as that of Hera, from the pedimental groups, and undoubtedly the work of Polycleitus. Its ascription to Hera is generally accepted; but as to its workmanship and original position there are well-founded doubts. The style of Polycleitus, which is well known from extant copies of his works, is not clearly traceable in this graceful head, which speaks of a greater affinity with the Athenian types. Moreover, the other unquestionable fragments of the pedimental sculptures are said to be of a different marble from this.

Between the later temple and the Cyclopean wall, the remains of another portico, the "North Stoa," were discovered. It is 55.50 metres long and of a good period, though later than the temple. On the southern slope, a broad flight of steps was met with; and the conjecture that it led to a kind of propylæum, forming an approach to the temple, was confirmed by subsequent excavations. A large quantity of pottery, terra-cotta figurines, and some bronze objects were found in different parts of the ruins.

The most important find of this class of objects was made in the slope to the west of the temple. Here, at a depth of from eight to ten feet, a thick layer of black earth was met with on the incline of the underlying rock; and for three weeks it continued yielding an immense

number of terra-cotta heads and figurines of all descriptions and dates; fragments of vases and of archaic pottery; iron, bronze, stone, amber, bone, and ivory objects of all kinds; mirrors, beads, pins, and seals; figures of animals, and scarabs,—evidently Egyptian imports of very early date. All these objects were found massed together in successive heaps, mingled with the bones of animals. This latter fact confirmed the conclusion—suggested also by the stratification of these heaps—that the refuse of old altars, and cast-off offerings, once held sacred, were shot here, in order to level up the slope, at some date earlier than the building of the new temple. It is, I venture to think, more probable, that at least a large portion of this refuse must have come from the clearance of the superincumbent mass of rubbish on the upper terrace after the fire. This supposition gains strength from the fact that in the same spot were found bisected drums of columns which must have belonged to the old temple. They bear peculiarly worked holes for the ropes by means of which they were lifted into position—a device observed only in the oldest temples of Sicily. This veritable treasure trove was completely excavated during the following campaigns; yielding no less than eighty "basketfuls" of various objects,—all of the greatest value in respect to primitive art and conducive to the solution of many questions arising out of the discovery of similar objects at Troy, Mycenæ, Tiryns, Laconia, and elsewhere.

These results of the first season sufficiently indicate the nature of the entire exploration, which was completed during the springs of 1893, 1894, and 1895. Gangs of men, numbering at times as many as two hundred and fifty, were employed under the direction of Dr. Waldstein, who, being frequently absent on other quests, was replaced by Mr. H. S. Washington and Mr. J. C. Hoppin. Dr. Waldstein acknowledges the "enthusiasm and unselfish devotion" of Mr. Washington, and says: "I can hardly realize how the undertaking could have been carried out, as it has been done, without his coöperation." Like credit is due to Mr. Hoppin, who took charge of the last season's work, and to Mr. E. L. Tilton, who acted as architect. Most of the other students of the School participated in the last three campaigns, the outcome of which may be summarized as follows:

Immediately above the flight of steps on the southern slope of the temple, where it was thought a kind of propylæum might exist, the remains of another *stoa*, 45 metres long and 13 wide, were discovered. Of its nine Doric pillars portions were found *in situ*, the capitals lying near. The walls are of fine Hellenic masonry; and the entire building

must have formed a most imposing approach to the temple. Among its ruins were found a number of the huge drums and other architectural and sculptural fragments of the temple, which, it was evident, in falling from above, must have crushed through the roof of the *stoa;* its floor being littered in places with the remains of roof-tiles and metopes. Nevertheless it is the best preserved of all the building in the Heræum. A flight of steps leads up to this *stoa;* while traces of another great staircase were found covering the slope to the west of the temple.

Between the Cyclopean wall and the North Stoa, the foundations of two sets of buildings, of an earlier and a later date, resting on two different levels, were traced. The later one extends to a length of a hundred metres, with an average depth of ten metres. The earlier buildings are evidently of great antiquity, and, from objects found in them, are believed to have served as the dwellings of the priestesses or attendants of the original temple. The remains of several other structures were unearthed on the two lower terraces, at a depth varying from twenty-five to thirty feet below the foundations of the new temple. Their use and purpose remain undefined; but two of them, measuring 33 by 30 and 31 by 11.40 metres respectively, may have served as a gymnasium and a treasury. Close to what has been styled the "West Building," parts of a Doric entablature were met with, bearing vivid polychrome ornamentations.

The entire appearance of the Heræum may now be pretty accurately figured, with its "imposing buildings rising from the foot of the hill upward, tier upon tier, to the terrace of the old temple on the summit." It has also been made clear that the earlier structures and their approaches were massed on the west, toward Mycenæ; while the later ones faced Argos, to the southeast; each set thus testifying to the successive supremacy of the two cities.

Beyond the sacred precincts, to the west of the temple on the banks of the Eleutherion, an extensive system of Roman baths was traced and cleared; while within the precincts, but outside the peribolus of the old temple, some very early graves, similar to those found at Salamis, were discovered. About half a mile west of the temple, other tombs, of the earliest Mycenæan beehive shape, were met with. In one of these, 2.50 metres in diameter and 3.40 in height, no less than forty-nine vases, nearly all perfect, and several other archaic objects were found. It was fortunately possible to photograph the entire sepulchral arrangement before anything was removed, the rays of the sun lighting the interior of the tomb through the opening above.

The exploration of the Heræum, though involving no original research, has undoubtedly yielded results of high scientific importance. Without admitting that it is "the model excavation in Greece,"—for the German exploration of Olympia still holds its preëminence in this respect,—it is a source of legitimate pride to the American Scholars whose zeal and perseverance brought the work to a satisfactory conclusion; and it reflects honor on those whose liberality rendered the undertaking possible. But the actual scientific value of the exploration must depend on the manner in which its results are treated and published. With the exception of Mr. Brownson's report on the first season's work, the available accounts of the several campaigns are of a provisional kind and somewhat meagre. Exact and exhaustive treatises require, no doubt, much time and conscientious labor. Yet, for this very reason, one turns with appreciation to the able treatment which the inscriptions and stamped tiles have already received at the hands of Profs. J. R. Wheeler and R. B. Robinson respectively.

The inscriptions of the Heræum are the only class of objects which, in number and importance, have fallen below reasonable expectations. But they include one of very great interest,—a bronze plaque 8 inches square, with eleven lines written boustrophedon in the earliest Argive characters, of which very few examples are extant. The yield of sculptures has proved richer than the first season promised. Some of the best pieces were discovered during Mr. Hoppin's superintendence of the fourth campaign. The fragments recovered are now being pieced together, with the help of the Greek restorer, Koulouris, at the Central Museum at Athens. And, although one may not be prepared to admit that "even those of the Parthenon can hardly rival them," what may fairly be said of the Heræum sculptures is, that they will add materially to our knowledge of the best epoch of Argive art.

The harvest of minor objects—including gold and silver ornaments, engraved gems and glass scarabs — is simply immense. Curiously enough, iron objects are here plentiful and remarkable, among them being a strange looking object, 5 feet long and 1 foot in diameter, which proved to be a mass of iron spears held together at the ends by iron bands,—no doubt an offering after a victory or on the conclusion of a peace. These objects now fill a large room of the Central Museum at Athens, and require much labor before they can be satisfactorily pieced together, classified, and adequately elucidated. J. GENNADIUS.